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THE
RETROSPECT OF MEDICINE

A HALF-YEARLY JOURNAL

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

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modern times—as to its fatality, being generally confounded with the choking symptoms occurring in the course of acute laryngitis due to œdema. Steffen in von Ziemssen's work states that catarrhs of the larynx, trachea, or bronchi are not of themselves capable of producing laryngeal spasms by reflex irritation, but when the cramp, as in this case, has previously existed, they are capable of exciting it, although it be disappearing, especially through paroxysms of coughing. Laryngeal spasm is, according to all authorities, very uncommon after the first three years of life, and then almost confined to the female sex. That it is a frequent cause of death is evident from the figures given by different authorities. In spite of this we find this condition alluded to in most text-books in a short article on laryngismus stridulus, having a usually favourable termination. The above recalls Marsh's "Published Cases," where at least, [illegible] laryngitis existed, which he denied, a sudden spasm often terminates fatally what has been looked on as a trivial ailment. Here, as well as I could judge, the spasm was primary. Whatever catarrhal symptoms were present resembled more the irritable condition of the larynx described in Cohen's book than any inflammatory change. As to the spasms in some cases being due either, as Cohen points out, to incarceration of the free edge of the epiglottis by the aryteno-epiglottidean folds taking part in the cramp, or the partial swallowing of the tongue described by Hemming, I think this case can belong to neither, for the reason that the tongue was pulled well forwards simultaneously with the artificial respiration. (Dublin Journal of Medical Science, February, 1896.)

[The case recovered without tracheotomy. The author admits that tracheotomy may appear to have been indicated.]

LARYNGEAL TUBERCULOSIS.—Treatment of.

Dr. John N. Mackenzie, of Baltimore, referred to the papers read before the American Laryngological and British Laryngological Societies on this subject. Krause, of Berlin, and Hering, of Warsaw, had done the best work on this subject. The surgical treatment of tuberculosis of the larynx is carried out by total and by partial curettement of the lesions, with the application of lactic acid. Usually the tissues are first curetted out with specially prepared instruments, and then the acid is rubbed in. The Germans use a 50 per cent. solution of lactic acid, while others use it pure, and some operators rub the acid in without curetting, provided ulcerations exist, for the acid will not go through the intact mucous membrane. The tissues may also be injected with a solution of the acid. The results of this treatment by curetting and lactic acid are wonderful. The

Synopsis

AN ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THIS VOLUME, WITH OTHER SHORT ARTICLES FROM THE MEDICAL JOURNALS, SHOWING THE MOST IMPORTANT INDICATIONS OF TREATMENT, PUBLISHED BY DIFFERENT WRITERS DURING THE HALF YEAR.

ARRANGED ALPHABETICALLY.

GENERAL MEDICINE AND THERAPEUTICS.

ACROMEGALY.—Treatment of.

Marinesco (*Semaine Médicale*, November, 1895) reports three cases of acromegaly treated with glandula pituitaria. Two cases were of the "massive" type (a woman of 53 years and a man of 54), and one case (a woman of over 36 years) of the "giant" type. Under the treatment the severe cephalic pains were diminished in the cases of "massive" type, but the remedy had no effect upon the neuralgic pains of the limbs. The general condition improved, but Marinesco was unable to produce the slightest diminution of the hypertrophied members. Increased diuresis was the most conspicuous effect of the treatment. Marinesco and Marie believe that acromegaly depends upon a functional disturbance of the pituitary gland, but reject the hypothesis of Tamburini and Massalongo, that the hypertrophy is a result of hypersecretion of the gland. In occasional cases section has shown that the gland had suffered a change and that the cells had been supplanted by elements of a different kind, which had not the power to supply the normal glandular secretion. (Medical Record, February 29, 1896.)

ADDISON'S DISEASE, SUPRARENAL EXTRACT IN.

Osler (*Internat. Medical Magazine*, February, 1896) records 6 cases of Addison's disease, and after remarking on the subject of ductless glands, goes on to draw an analogy between this condition and myxœdema. He then recommends the trial of suprarenal extract in the treatment of Addison's disease, and states that in one of these cases, in which there was pulmonary tuberculosis, gradual asthenia, and pigmentation in a man aged 46, this treatment was tried with good result. Suprarenal extract was given for eight months, and there was rapid disappearance of the serious symptoms, with marked and persistent improvement in the general condition, but the pigmentation remained unchanged. The patient had gained 19 lbs., and he was bright and active instead of being profoundly asthenic and emaciated, as when he first came under observation. (British Medical Journal Epitome, April 4, 1896.)

Drs. Sydney Ringer and Phear contributed a paper to the London Clinical Society containing an account of a case of Addison's disease treated with suprarenal extract: they also gave a brief summary of recorded cases for which similar treatment had been adopted. Of 9 cases, 5 had shown improvement, although in some of these a sufficient time had not elapsed to determine whether or not the benefit was permanent. In 2 cases no improvement was noted; in 1 case the treatment was given only a very limited trial; in 1 the disease ended fatally in spite of suprarenal treatment. The suprarenal tissue was in some cases administered by the mouth, in other cases hypodermically. Details were given of a case lately under this treatment in University College Hospital. A woman, aged 28, had had symptoms of Addison's disease for two years, progressive weakness with some loss of flesh, vomiting without special relation to food, and pigmentation of the skin. Excessive pigment was present on the face, hands, forearms, axillæ, about the nipples, over the knee-cap, and in the neighbourhood of the toes and ankles. The discolouration was well marked in the armpits and around the mouth. There were deeply pigmented inky patches on the mucous membrane of the mouth, opposite the teeth. There was no evidence of tubercle in the lungs or elsewhere. Treatment with suprarenal extract was commenced, in doses equivalent to 45 grains of suprarenal body daily; this was gradually increased to a daily dose of 120 grains. There rapidly followed improvement in the general condition, and the pigmentation became notably lessened in degree. Vomiting, however, remained troublesome. No rise of arterial tension was noted. The improvement continued for four weeks, when there was a rapid change for the worse. There was no increase of pigmentation, but the general condition quickly deteriorated, cardiac action became feeble, and death occurred within six weeks of the commencement of the treatment, and just over two years from the earliest symptoms of the disease. The temperature rose to 102° on the day before death During the last few days arsenic and strychnine were given in the place of the suprarenal extract. The necropsy showed the suprarenal bodies to be shrunken and flattened, about a third of their normal size, and exhibiting no trace of the normal structure.

Dr. Parkinson related the case of a man, aged 31, recently admitted to the Westminster Hospital under Dr. Murrell, and treated with suprarenal extract. He had increasing debility and bronzing for three months, without signs of phthisis. On November 26, 5 grains of extract were given; twelve days afterwards he began to vomit frequently. One drachm of fresh sheep's gland was then administered, but vomiting increased. The dose was then reduced to 15 grains, given three times a day, and the vomiting lessened. But he gradually sank, and died in January of this year. After death caseation of the adrenals was found.

Dr. Turney had seen two cases treated with suprarenal extract. One was the case of a male, aged about 30, in whom the pigmentation was particularly marked on the backs of the hands. During the treatment vomiting, which had been a slight symptom, became much more serious. He lived only a fortnight. Both capsules were found to be caseous. The second case was too bad when it came under treatment to hope for benefit, and the patient lived only two days after admission, having received only four doses of the remedy. The effect of the treatment was inappreciable.

Dr. Ringer, in reply, said this was the only case of Addison's disease treated in this way which he had had. Moreover, cases of Addison's disease ran a variable course, so that if one case under the treatment should improve he would not consider that it was certainly due to the treatment.

Dr. Phear, in reply, said he did not believe that vomiting in this case was due to the treatment, as it was a marked symptom before the treatment was begun. The patient's temperature was normal whilst he was under treatment except just before death. (British Medical Journal, January 18, 1896.)

ALKALOIDAL MEDICATION.

Dr. T. C. Humphrey, of Portland, read a paper on this subject before the New York State Medical Association. The danger was removed by knowledge sufficient for a proper diagnosis and by an understanding of the physiological action of medicines. There was no recognised dose, for no one could positively tell how much of a given remedy would be required to relieve a given symptom; therefore minimum doses should always be given and frequently repeated until the desired effect was obtained. Those physicians who objected to alkaloidal granules, which contained certain known quantities, did not object to giving infusions, tinctures, fluid extracts, and solid extracts, all of which must contain alkaloids in unknown quantities. The speaker did not see the advantage of giving the crude drug in tablespoonful doses when we could obtain better results with a sugar-coated pellet which was not disgusting to the patient. He had been using the alkaloidal system for several months and was very well pleased with the results obtained. He was confident that it was a step in the right direction. It gave us the opportunity of carrying a stock of medicine in so small a space that we were able to meet the immediate demand of almost any case without having to send a long distance to receive only a poor substitute for what we had prescribed.

Dr. Robinson had used alkaloidal medication for about six years. In country practice he could not do without it, for it was impossible to get a prescription compounded. It was easy of administration and convenient. The only requisite was an absolute diagnosis. (New York Medical Journal, November 2, 1895.)

ANTITOXIC SUBSTANCES IN THE BLOOD.

The results of Loeffler and Abel's investigations (*Centralbl. f. Bakt. u Parasit.*, January 23rd, 1896) may be thus summarised: (1) The injection of increasing doses of virulent typhoid bacilli or colon bacilli into dogs produces in the blood of these animals certain substances that possess a specific protective power against the kind of bacillus by which they are produced. (2) The ordinary blood serum of untreated animals possesses a protective power against the ordinary fatal doses of typhoid and colon bacilli, and also against small multiples of the fatal doses; the exact dose depends upon the quantity of serum injected beforehand. (3) The specific action of the antitoxin in the blood of animals injected with bacilli becomes evident when such quantities of bacteria are injected as are multiples of the quantity against which normal serum protects. (4) The specific antitoxic action is also evidenced when a mixture of bacteria are injected with the serum. (5) The typhoid serum protects against a somewhat larger dose of colon bacilli than normal serum and, *vice versa*, the colon serum protects against a somewhat larger dose of typhoid bacilli than normal serum; this fact would seem to indicate a family relationship between the two kinds of bacteria. (6) The specific serum does not protect against the substances contained in the bodies of dead bacteria in any higher degree than does normal, ordinary blood serum. (7) Injection of normal serum into the peritoneal cavity of guinea pigs and then, twenty-four hours later, injection of twice the fatal dose of dead bacilli, produce in two weeks immunity against 100 times the fatal quantity of living typhoid bacilli. (Journal of the American Medical Association, March 9, 1896.)

ARSENIC, SUBCUTANEOUS INJECTION OF.

Prof. von Ziemssen (*Deutsch. Arch. f. Klin. Med.*, Band lvi., October 25, 1895).—The excellent results obtained from the subcutaneous administration of arsenic has induced Ziemssen to improve the form in which it is used. His success in a case of Hodgkin's disease and in two cases of lichen ruber has suggested to him a much wider application. The injection of the official liquor containing potassium arseniate gives rise to much pain, inflammatory swelling, and even abscess and gangrene, so that the preparation is, as a rule, unsuited for the purpose. The reason of this lies in the mode of preparation and in the presence of a mould which rapidly settles in the solution. To overcome this Ziemssen has adopted the following: One gramme of arsenious acid is boiled in a test-tube with 5 cubic centimetres of normal soda solution until it is completely dissolved; the solution is then shaken in a flask, diluted to 100 grammes, and filtered. For use, it is placed in small tubes of 2 c.cm. size, which are corked with cotton-wool and sterilised in steam. Of such a 1 per cent. solution of sodium arseniate a quarter of a centimetre is used at first once a day; after several days, twice daily; and gradually increased until a whole syringeful is given twice a day—a daily dose of about three-tenths of a grain of sodium arseniate being given. These large doses, if administered with caution, and if slowly increased, can be borne, and produce no disturbance of the appetite. In delicate, nervous patients there sometimes appeared after large doses a condition of increased nervous excitability, a feeling of bodily weakness and mental exhaustion. These symptoms soon vanished on intermitting the injections, and did not return. (The Practitioner, January, 1896, p. 106.)

BISMUTH SUBNITRATE.

Mr. Gaucher (*Répertoire de Pharmacie*, 1896, No. 1) reports four instances of poisoning after its use externally; one of these was fatal. An analysis showed that the drug was pure, so that the symptoms could not be attributed to lead. Three forms of poisoning are observed—(1) The benign form, in which the only symptom is a brownish-violet staining of the gums. (2) The more severe form, in which there is a more or less acute stomatitis, to which a chronic condition succeeds marked by gingival streaking and tattooing of the buccal mucous membrane. (3) The acute phenomena resist all treatment, the affected points ulcerate, and secondary infection follows, which gives rise to general symptoms, more or less severe, as fever, hiccough, vomiting, diarrhœa, albuminuria, to which the patient may sometimes succumb. Bismuth, when used externally, forms a soluble combination with the albuminoid substances which is readily absorbed. On the other hand, when taken by the mouth, the stomach-contents are too feebly acid for making a solution of the drug, and in the intestines the alkalinity makes absorption difficult, and this is increased by its being incorporated with the fæces in which it is expelled. Mathieu reports an instance where five drachms of the drug were injected each day for 80 days without producing any symptoms beyond a slight stomatitis with pigmentation of the face recalling that of arsenic. (American Journal of the Medical Sciences, April, 1896.)

BONE-MARROW.

Dr. T. K. Alexeiew (Sem. méd. 1895), has employed bone-marrow in two cases of malarial cachexia, in one of hemorrhagic purpura with great debility, and in one of leucæmia. In these cases, all modes of treatment previously employed had completely failed, and it was not until bone-marrow was given to tl patients that the latter began to improve in health [illegible] remedy was given in daily doses of 45 to 90 gme. (1½ to 3 c itl er raw, or in sandwiches, or in a mixture composed of alf's bone-marrow 90 gme. (3 oz.), port wine 30 gm 1 oz.), glycerine 30 gme. (1 oz.), and gelatine 20 gme. (5 dr. Dr. Alexeiew has noticed that the glycerine contained in the bove sometimes produced diarrhœa, and that it then is well replace the glycerine by some fresh cream. The two cases f malarial cachexia were rapidly cured by the injection of bone-marrow the spleen soon regained its normal dimensions. In the case f leucæmia, the state of the patient was a very grave one before the bone-marrow treatment was begun; the spleen completely filled the left side of the abdomen as far down as the Fallopian ligaments; the blood resembled water in which meat has been washed, and contained but 2,000,000 of formed elements to the cubic millimetre, in the proportion of 1 white to from 20 to 30 red corpuscles; there was extensive œdema, and epistaxis frequently occurred. Under the influence of the ingestion of bone-marrow, the œdema disappeared, the epistaxis ceased, the skin and the mucous membrane assumed a healthier colour, the number of formed elements doubled—there being then present 1 white to every 100 red corpuscles—and the spleen decreased in size, so that it did not reach beyond the umbilicus. At the time the report was made, the patient was still under treatment, but everything pointed to complete success being achieved by the bone-marrow treatment. Dr. Alexeiew has also observed that in several cases of phthisis considerable improvement followed this organotherapeutical treatment. (American Medico-Chi. Bulletin, December 1, 1895.)

BONE-MARROW IN OSTEOMALACIA.

Dr. T. M. Allison relates a case thus treated with much benefit. The following points are stated to be of interest :—(1) The early onset and chronic course of the disease. (2) Its being associated with puberty, but not with pregnancy. (3) There being great deformity, but no true fracture of the bones. (4) The pelvis having given way behind rather than in front. (5) The association of extreme kyphosis with marked lateral curvature. (6) The general course of the disease from below upward, most marked in the right limbs, and the correspondence of deformity in the upper and lower extremities. (7) The striking effects of the treatment, and the tendency of the skeleton, under its influence, to revert, without the aid of the muscular system, to the normal type. In conclusion, in view of the terrible condition of patients suffering from this formidable disease, and as an alternative to the procedure of oöphorectomy, with or without removal of the womb, I trust I am justified in bringing this promising form of treatment before the notice of the profession. The treatment consisted in the administration of healthy bone-marrow, the preparation employed being a glycerine extract from the cancellous tissue of the leg bones of the calf (Brady and Martin). This was given in doses of half to one and a half drachms three times daily after food, the quantity used during the first three months being 4 oz. weekly. Note 7 months later.—Satisfactory progress still characterises this case, deformity (here and there little by little) having steadily gone down during the last four months. The old pains have disappeared. Satisfactory movement has returned to the joints where rigidity formerly existed, and the accumulated deformity of thirty years is slowly melting away, the shoulder and hip joints, though improving, yielding least. The patient dressed herself at night, sat up in a chair, and spoke of the contrast of a year ago, when she was almost helpless, suffering pain the whole night, and wishing she might not see another year. The marrow treatment, in the same form and quantity, has been steadily persevered in, except that in December I substituted tabloids for the glycerine extract, and the solid form seems (as in other animal extracts) to have more therapeutic value than the liquid preparation. (Edinburgh Medical Journal, May, 1896.)

BROMO-TOXICATION.

Dr. S. Weir Mitchell, of Philadelphia, in this paper related a number of observations of the effects of large doses of bromide upon the nervous system. The father of an epileptic girl increased the dose of bromide from 60 grains a day to 150 grains. She was found with the head dropped forward, in a state of mental hebetude, saliva running from the mouth, eyes open, pupils enlarged, and hard to arouse; the general epileptic convulsions had ceased, but the lesser fits were quadrupled in number. Withdrawal of the bromides restored her to her normal condition, which was usually rather intelligent. A nurse by mistake gave two epileptic children nearly 100 grains of lithium bromide a day for mild epilepsy. In a few days both were brought into a condition of extraordinary feebleness of mind and body. Neither of them could walk; the left leg was more affected than the right. They were restored within two or three days after withdrawing the bromide. Dr. Mitchell related equally striking cases of melancholia, with and without suicidal tendency, produced by large doses of bromides in some form. The enfeebling effect of bromides upon the muscular system, and upon the mind, or irritation of the latter, was sometimes seen in alcoholics or those suffering from insomnia who had taken the bromine in the form of bromo-caffeine, bromide of sodium, &c. Habitual drunkards sometimes said they became more drunk on one side than on the other, oftenest on the left. A similar result was observed sometimes from excessive doses of the drug under discussion. (Medical Record, May 9, 1896.)

CACTUS GRANDIFLORUS.

Dr. Ulikhailoff, in an elaborate article on the therapeutic properties of cactus grandiflorus, draws the following conclusions:—(1) Cactus grandiflorus produces a well-marked elevation of blood pressure; (2) the increase in blood pressure rapidly lessens on the discontinuance of the drug; (3) it has a well-marked diuretic action; (4) in cases of cardiac palpitation, associated with asthma, its effects are good when given in full doses; (5) on the unpleasant subjective sensations in cases of goitre its effects are very beneficial.—*Pharm. Zeitschrift*, No. 29. (Dublin Journal of Medical Science, December, 1895.)

COCAINE POISONING.—Recovery from.

At a recent meeting of the Philadelphia County Medical Society, Ball reported the case of a woman, 35 years old, who swallowed with suicidal intent 6 drachms of a 5 per cent. solution of cocaine, representing 18 grains of cocaine. The patient had for ten years been a sufferer from stricture of the rectum, for the relief of which she was accustomed to apply cocaine topically on a pledget of cotton. After the ingestion of toxic dose dryness of the throat soon appeared, and on attempting to rise from her couch to summon aid the woman felt dizzy and fell to the floor. Raging delirium set in and the patient attempted to throw herself from a balcony to the ground. She talked loudly, incessantly, and incoherently. Physical restraint was necessary, and the hypodermic administration of morphine was resisted, although a third of a grain was given by the mouth. The pupils became widely dilated, the pulse hardly perceptible and very frequent. The tongue was from time to time protruded spasmodically and the teeth were gritted together in a tetanoid manner. At one moment the patient was depressed, at another exalted. She frequently rubbed her hands, which she complained of looking dirty. The tongue was much congested and cyanotic and anæsthetic. There was no appreciable anæsthesia elsewhere. The administration of black coffee and lukewarm water was followed by free emesis. Two hours after the poison had been taken the patient was resting quietly, with the pulse stronger but still frequent. Thirst was extreme and motility greatly impaired. Emission of urine was secured, and strychnine (gr. $\frac{1}{30}$) and champagne were administered. Perspiration set in and pallor gave way to a slight glow. Four hours from the beginning the patient was sleeping soundly, and the pulse had fallen to 100 and was much stronger. After a time consciousness returned, and there was no recollection of time and little of previous events. On the following day the patient was weak; her body felt bruised, and her limbs heavy and useless. Fæces and urine had been passed without difficulty. Appetite was impaired and thirst was still present. The tongue was no longer congested and sensibility had returned. The patient gave a history of having taken an overdose of cocaine in the dry state on a previous occasion, when the delirium was acute and was overcome by the use of morphine in large doses. (Medical News, November 9, 1895.)

DIABETES.—Diagnosis of.

Dr. Bremer diagnoses the presence of diabetes by staining cover-glass preparations with eosin-methylated-blue. The red cells in diabetes give a green colour. He draws the following conclusions:—(1) The diagnosis of diabetes from a drop of blood can be made with as great a certainty, perhaps with a greater one, and almost as quickly, as by urine tests. (2) There is a substance, at present unknown, which occurs in the diabetic red blood corpuscles, foreign to these bodies in the physiological state, which causes the specific reaction with the eosin-methylene-blue compound described. In no other condition of the blood is this substance (or combination) met with than in diabetes and glycosuria. The only exception I have met with so far is in embryonic chicken blood. (3) It is not the presence or excess of sugar in the blood which causes the clinical symptoms of diabetes, but it is with greater probability the foreign element alluded to, which is probably combined with the hæmoglobin, in conjunction with the white (necrotic) masses resulting from the decay of the corpuscular elements of diabetic blood that makes the clinical symptoms, and is possibly the anatomopathological substratum' of the disease. In making the cover-glass preparation a film of blood is dried on the cover-glass and is placed in a wide-mouth bottle containing equal parts of alcohol and ether. The bottle is placed in hot water and the mixture boils for about four minutes. The cover-glass is then transferred to the stain. (New York Medical Journal, March 7, 1896.)

Diabetes.—Treatment of.

After relating a case, with comments, Dr. James thus describes the treatment:—Our patient has been put upon diabetic diet, and we are doing what we can to keep his skin function in good order. Warm flannel clothing is of course essential for this, but hot baths, or even (for patients who can stand it) Russian or Turkish baths at intervals, may be employed. As regards drugs, with the exception of opium or codeia, we do not know of any which have a marked effect on the glycosuria, but we know that with such treatment as cod-liver oil, and with arsenic in increasing doses, we often get general improvement, and these drugs we are now giving to our patient. We have seen cases which did remarkably well on milk alone, and I had a patient lately who seemed to be improved by euonymin, which I gave him on the theory that whatever affected beneficially the biliary function of the liver might have a like effect on the glycogenic. Then we must remember that whatever improves the mental and general condition has a beneficial effect on the disease, and so we must endeavour to arrange that diabetic patients be shielded from all business cares and worry, and that they should have all the good which change of air and scene alone can give. If in time the patient declares that he can no longer eat and digest the gluten bread and almond cakes, or if the craving for wheaten bread and potatoes can be no longer resisted, the best form in which to give these is toasted. In such circumstances we not infrequently find that the allowance of a little toasted bread or chip potatoes may appear to be rather beneficial. In time, too, opium or some of its derivatives may be required, but these should only be used with caution. For the coma, when it occurs, little can be done. On the theory that it is due to the liberation of some acid, the injection into a vein, or subcutaneously, of a 3 per cent. solution of sodium bicarbonate has been advised. So also has the inhalation of oxygen, but neither of these has been found to be of much use. (Edinburgh Medical Journal, April, 1896.)

DIPHTHERIA.

The following are the results of the bacteriological examination in nine fatal cases treated by the serum:—In eight of the nine cases of uncomplicated diphtheria to which antitoxin had been given, the bacteriological examination at the autopsy showed a more or less well-marked invasion of the blood by the pyogenic cocci. The results in detail are as follows:—In five cases the streptococcus was found in the liver, spleen, kidney and the blood of the heart; in one case in the kidney and blood of the heart; and in one case in the spleen. The pneumococcus (micrococcus lanceolatus) was found only infrequently, it being observed in two cases in the kidney, in one of which the streptococcus was also found in the spleen. In the cultures from one case the only organism present was the bacillus coli communis In the lungs of all these cases were found the bacillus diphtheriæ, streptococci, pneumococci, and the staphylococcus pyogenes aureus, either alone or in various combinations. The presence of the organisms mentioned above in the various viscera enables us to better understand the fatal issue in spite of the antitoxin given; for this agent, as stated above, cannot be assumed to act against any other organism than the bacillus diphtheriæ. Welch considers anti-diphtheritic serum a specific curative agent for diphtheria, and shows that if antitoxin be given during the first three days of the attack, the fatality is much less than in cases in which the serum is given later in the disease. He also thinks that this serum may prevent the development of secondary infections, and that the failure of antitoxin to cure may at times be due to the presence of other complicating bacteria. Assuming, therefore, beyond peradventure, the efficacy of this remedy, the importance of its early and thorough administration cannot be overestimated, for by this means the dangers of secondary infection may not only be lessened, but if this condition be present, the system may possibly be better prepared to overcome the ill effects of the various complicating bacteria present in the body. As to the occurrence of the bacillus diphtheriæ in the internal organs in these nine cases, it cannot be said that it has been met with any less frequently than in any other cases which have come to autopsy at the City Hospital, and which are referred to above. In these antitoxin cases it has been found in the kidney in four cases, and once in the heart and spleen respectively. (From Dr. Stokes' paper in the Boston Medical and Surgical Journal, December 12, 1895.)

DIPHTHERIA, CUTANEOUS.

Flesch (*Berliner klinische Wochenschrift*, 1895, No. 43, p. 935) has reported the case of a girl, 2½ years old, who was accidentally burned with hot water upon the face and trunk. The lesion varied in severity in different places, being most profound upon the trunk. Under treatment with 2 per cent. salicylated vaselin marked improvement resulted in the course of a week. At the end of this time the mother kissed the child upon the neck and on the following day presented symptoms of diphtheria, passing through a well-pronounced attack. A sister and the husband also suffered attacks of diphtheria. In the course of three days the child presented in the situation touched by the mother's lips a circumscribed, whitish, swollen area surrounded by œdema, from which, on cultivation, diphtheria-bacilli were isolated. The throat showed no evidence of involvement. Two injections of antitoxic serum of 100 immunity-units each were made, but without appreciable effect. Slight paralysis of the palate appeared as a sequel. (Medical News, December 9, 1895.)

DIPHTHERIA BACILLI.—Persistence of in Nasal Mucus.

At a recent meeting of the Société Médicale des Hôpitaux, Legendre and Pochon (*Progrès Médical*, 1895, No. 52, p. 459) reported the case of a child that had been under observation for fifteen months, during which it was affected three times with diphtheria (once angina, once stomatitis and rhinitis, once rhinitis and angina). Bacteriological examination made methodically on thirteen different occasions demonstrated the presence of diphtheria-bacilli, sometimes virulent, sometimes not, varying in form and size, and sometimes alone and sometimes associated with staphylococci. The organisms would disappear upon antiseptic irrigation, but would reappear when this was withheld. The case illustrates the condition of latent microbism. (Medical News, February 1, 1896.)

DIPHTHERIA BACILLI AND THEIR PRODUCTS.

A paper read by Drs. Kanthack and Stephens at the last meeting of the Pathological Society of London throws a new light on the production of the diphtheria toxin within the living organism. On the strength of the very interesting researches carried out by Dr. Sidney Martin it was believed that the bacillus developed exclusively in the false membranes which form in the throat, and the presence of poisonous albumoses in the viscera was explained on the assumption of the elaboration by the diphtheria bacillus, located in the throat, of a ferment or ferments which acted on the tissue proteid and converted it into the albumoses aforesaid. The more recent investigations of Drs. Kanthack and Stephens confirm the observations of others that, as a matter of fact, the bacillus is often to be found in the organs, especially in the lungs and spleen. Their investigations, it is true, were carried out on the subjects of fatal diphtheria, with laryngeal complications, and this may possibly account for the presence of the bacillus in the lungs. Broncho-pneumonia, it is well-known, is a fairly frequent and always dangerous complication of diphtheria, and in the light of this discovery of the ubiquity of the pathogenic organism it is highly probable that the pulmonary disease is really of diphtheritic origin. It is possibly only in the most severe cases that the bacillus breaks bounds and wanders far and wide through the tissues, and enters the lymphatic and blood circulations, but this is a point which demands further inquiry. The fact has an important clinical and therapeutical bearing, because it follows that the quantity of toxin requiring to be neutralised is far greater than has hitherto been supposed, and this points to the desirability of employing antitoxin freely in large doses in all cases which manifest any degree of severity. (Medical Press, Jan. 29, 1896.)

DUBOISINE AS A HYPNOTIC AND MOTOR SEDATIVE.

At a recent meeting of the Society of Neuropathology and Psychiatry of the University of Kasan (*Deutsche Medizinal-Zeitung*, December 23, 1895) Dr. Skuridin related his experience with duboisine in various forms of psychical disturbance. Besides its hypnotic effect, he had noted its sedative action in cases of motor excitement. He had used it subcutaneously in doses ranging from 0·0075 to 0·015 of a grain. As the result of 360 injections given to twenty-one patients, sleep lasting for six hours had occurred in 153 instances, sleep lasting between four and six hours in 126 instances, sleep lasting less than four hours in 62 instances, and failure in 19 instances. The remedy seems to have acted most favourably in epilepsy, periodical psychosis, and mania. The author considers the hypnotic effect of the drug as secondary to its action as a motor sedative, for he has not found it appreciably if at all useful in sleeplessness depending on delirium, organic diseases of the brain, &c. (New York Medical Journal, January 11, 1896.)

ERYSIPELAS.—Serum Treatment of.

The official report of the erysipelas hospital at Paris for the past year is an interesting contribution to our knowledge of serotherapeutics. Patients were treated by different methods, but the percentage of cures was very much larger with the serum treatment. When the supply of serum ran short the cures grew less. When an abundant supply was on hand the mortality fell to 1·03 per cent. Total number of patients treated, 1,055; with serum, 501. Large doses of serum proved most effective; one patient with purulent pleurisy had 300 c.c.

injected in a fortnight without the slightest inconvenience from its use. The average dose is 20 to 40 c.c., and the beneficial results are directly proportionate to its preventive strength. The general health improves after first injection; delirium and nervous symptoms disappear; fever rarely persists as long as two or three days; pulse grows at once less rapid and stronger; if albuminuria is not present it does not develop, and it is cured where it exists, in forty-eight hours at farthest. Small doses of the serum, when a relapse threatens, prevent it in many cases.—*Rev. Internat. de M. et de C.*, January 25. (Journal of the American Medical Association, February 29, 1896.)

IMMUNITY AND CURE.

The following conclusions are appended to Dr. Stanley Abbot's paper:—(1) Infection is due to the introduction and spread throughout the body of bacterial poisons, proteid in nature, probably nucleo-albumins and nucleins, derived from the germ-substance of the bacteria. (2) Resistance to infection is natural, by means of physiological and chemical processes (leucocytosis, phagocytosis, and the formation of germicidal and antitoxic nucleins), and artificial, by means of antiseptics, induced tolerance for the poisons, and increased capacity to destroy the poisons and germs. (3) Induced tolerance is secured by the administration of increasing doses of the poison, beginning with a non-toxic dose, and is due, perhaps, to altered cellular metabolism. (4) Increased capacity to destroy germs and poison is secured by the administration of the serum of animals in whom induced tolerance has been established, and is due probably to the germicidal and antitoxic nucleins in the serum, which also stimulate the formation of such nucleins in the body by the activity of the cells. (5) The immunity conferred by these methods is more or less temporary, and is never absolute. One word as to therapeutics. The next advance in the production of immunity and the promotion or recovery from the infectious diseases will be the use of the nucleins from the so-called antitoxic serums, freed from the other undetermined substances of the serum, and of a dose whose strength is known exactly by its weight, not merely approximately by its results on animals. (Boston Medical and Surgical Journal, Dec. 19, 1895.)

INFECTIVE DISEASES.

The following are some of the chief sources of danger of contracting these diseases:—(1) Dust from infected handkerchiefs. (A general rule applicable to all persons, sick and well, is that handkerchiefs should be looked upon with suspicion. They should not be used after any secretion from the nose has been permitted to dry upon them. After being used they should be put into a paper bag which may then have its top twisted shut, there to remain until put into boiling water). (2) Dust from floors or articles upon which infected sputum or saliva has been ejected. (3) Contact with the hands of persons who cough into their hands, or who handle infected handkerchiefs or cloths into which they have spit. (4) Books, pencils, gum, drinking-cups, &c., used in common. (5) Dust from rooms or clothing infected by persons having a communicable disease. (6) Possibly typhoid fever may be spread by means of dust containing the germs of that disease; but in order that typhoid fever may occur, the germs must be swallowed or find their way to the lower part of the small intestine. This disease is usually spread by drinking water which has been contaminated with sewage or with leachings from privies. Similar statements are true relative to cholera. (Pediatrics, January 15, 1896.)

IODINE IN DISEASES OF CHILDREN.

Dr. J. Comby asserts that iodism is of exceptional occurrence in children, and the younger the patient the less is the liability to this accident. In children, as in adults, iodine and the iodides find their special application in syphilis. Hereditary syphilis in the newborn agrees with the acquired tertiary form in demanding the use of the alkaline iodides. The potassium salt is of value not only in undoubted syphilis, but in cases where a syphilitic basis may be suspected, as coryza, obscure lesions of the buttocks, pseudo-paralysis, &c. Furthermore, even in the absence of any eruption upon the skin or mucous membranes, if the babe is cachectic without reason, if it does not thrive, Potain advises that it should be treated as a syphilitic. When a child is born before term and the mother has had one or more abortions, has lost one or more children at a tender age, it is prudent to adopt antisyphilitic treatment. Convulsions without apparent cause, meningeal manifestations, &c., indicate the administration of potassium iodide. At a later period, children with subcutaneous gummata, osseous tumours, or perforation of the soft palate improve upon the use of the same remedy. Dr. Comby has found iodine efficacious in several cases of paroxysmal hæmoglobinuria occurring among children. Potassium iodide is indicated in diseases allied more or less indirectly to syphilis (the para-syphilitic affections of Fournier), in hydrocephalus, for example; in cerebral tumours, chronic meningoencephalitis, partial epilepsy, &c. In grave cases it is well to associate the mercuric iodide, as in syrup Gibert. If the success of iodine medication be particularly brilliant in syphilitic cases the same method is of undoubted service in many other affections to which children are subject.

Among lymphatic, scrofulous, and anæmic children who suffer from glandular engorgements, tonsil hypertrophy, and pharyngeal granulations, the internal and external use of iodine is beneficial. The potassium or sodium iodide should be given in small doses, and not freely, as in syphilis. Iodine is indicated in the subacute, rebellious or chronic form of rheumatism, and particularly in nodose rheumatism, which has been observed in young children. The conjoined local use of iodine is here of service. The asthma of juvenile patients is favourably influenced by the same salt. Severe paroxysms of this disease may occur in very young infants. All pulmonary affections attended by spasmodic attacks, as emphysema, bronchitis, whooping-cough, tracheo-bronchial adenopathy, &c., are benefited by administration of the same remedy. The most tender age is no bar to its employment. Iodine is of service in the obesity of children and endemic goitre. In chronic renal and cardiac diseases (nephritis, chronic, endocarditis at the period of compensation) it is also of advantage. Certain tumours, abscesses, and empyemas are due to actinomycosis, and in such cases potassium iodide is the main reliance. The field of usefulness of iodine is large; its contraindications are few. It should not be given internally in pulmonary tuberculosis, especially when acute or febrile. In emaciated or cachectic infants, when the cachexia does not depend upon syphilis, iodine and its compounds should be avoided, and also, according to Comby, in pruriginous affections of the skin. The external use of iodine is a valuable revulsive measure. Potain does not fear the danger of its producing albuminuria, and was observed by Jules Simon in a number of cases.—*Bulletin Médical.* (Medical Record, January 4, 1896.)

LEPROSY.—Serum Treatment of.

Dr. Carrasquilla gives a full account of a case of well-marked tubercular leprosy characterised by leontiasis (the *leprôme en nappe* Leloir) and the anæsthetic phenomena commonly seen in the disease. Prompt improvement followed the use of the serum treatment, and recovery, save for the persistent marks of the ulcerative features of the disease, ensued in less than a month. Shorter accounts are given of three other cases of tubercular leprosy in which the results of serum treatment were equally satisfactory, and then the author states his conclusions as follows:—(1) The serum treatment overcomes the anæsthesia more or less rapidly, in proportion to the extent and gravity of the lesions of the peripheral nerves. (2) It decolourises the macules without obliterating them entirely; they become the seat of abundant desquamation. (3) It causes œdema to disappear rapidly in some cases, slowly in others; the skin retracts, becomes wrinkled, and finally returns to its normal state when the œdema has subsided. (4) The tubercles become flattened and softened and disappear, either by absorption, by desquamation, or by suppuration, leaving marks to show their situation. (5) After suppurating abundantly, the ulcers heal with marvellous rapidity and leave the skin sound. (6) The scars of old suppurative lepromata become pale, and tend to assume a level with the surrounding skin. (7) The ulcerated mucous membranes hasten to cicatrise, become decolourised like the cutaneous macules, and regain their sensibility, while the tubercles disappear. (8) With the disappearance of the œdema and the tubercles, and with the fading of the stains, the countenance grows thin and loses its leonine aspect entirely. (9) The appetite is recovered, together with the capability of sleeping; there is cheerfulness, content replacing the previous profound depression, and lost hope is regained. (10) From the first serum injection administered to the patient the morbific action of the *Bacillus lepræ* ceases, and no new manifestation of the disease shows itself. This the author has invariably witnessed in the 15 cases that he has treated. The peripheral nerves are the seat of the disease, he says, and the lesions observed depend on disturbed nervous action; that corrected, they will gradually disappear. (New York Medical Journal, January 18, 1896.)

LEUKÆMIA, ACUTE.

The following is taken from a leader in the *Journal of the American Medical Association*, March 14, 1896:—A. Fraenkel (*Deut. Med. Woch.*, 1895) has recently published a series of articles upon the acute form of leukæmia. He deals with the observations relative to six male and four female patients. Characteristic in all the cases was the sudden onset and the early appearance of symptoms, such as multiple hemorrhages. In addition to the falling off in the red corpuscles and the increase in the white, it was found that the excess of white cells depended exclusively upon the presence of an increased number of mono-nuclear elements, or lymphocytes of varying size. Transition forms between the acute and the chronic varieties of leukæmia have been described by reliable observers. The course of acute leukæmia points to its being an infectious disease. In two of Fraenkel's cases the complete absence of bacteria in the blood was fully demonstrated. The question as to an auto-intoxication from the gastro-intestinal tract is an open one. Two cases are noteworthy on account of the manner of their termination, namely, a rapid and constant subsidence of all leukæmic manifestations up to the very moment of death.

This occurred under the influence of an intercurrent bacterial infection, a septicæmia due to staphylococci, and colon bacilli respectively. Disintegration of the leucocytes in the blood and in their seats of formation occurred in these two cases as shown by the appearance of the blood and of the glands, and this was accompanied with a rapid exacerbation of the general condition, which led to the belief that a ferment intoxication was taking place; in one of these cases there was also a marked increase in the excretion of uric acid. The disintegration of the white cells must consequently be of essential influence upon the amount of uric acid excretion. These latter phenomena that occurred apparently as a direct consequence of the bacterial infection leads Fraenkel to direct attention to the possibility of a rational therapy—The treatment of leukæmia with bacterial products or with other substances that exercise a formative stimulus upon the blood forming organs, and favour the normal transformation of the young leucocytic cell forms into polynuclear leucocytes.

LEUKÆMIA, SPLENIC, FOLLOWING A BLOW ON THE ABDOMEN.

Dr. Churton showed before the Leeds and West Riding Medico-Chirurgical Society an iron-worker, aged 28, whose spleen filled the greater part of the left abdomen, and extended beyond the middle line. Red bloods cells diminished in number; leucocytes, 1 in 10. Patient looks well; face and lips red, eyes bright, movements brisk, but he is unfit for heavy work (tachypnœa). Family healthy. No illness until this, though careless in food and drink, and has lived in a very damp house, and was often wet at work. In 1887 he was kicked in abdomen rather severely, but not disabled. In 1892 a piece of steel weighing 2 lbs. flew off a mass of steel struck by a hammer of 85 tons impact, and travelling in an upward direction from two feet above the ground struck him at eight yards' distance on the left abdomen, about two inches from the median line and just above the umbilical horizontal line. The shock may thus have been directed through the colon and spleen, injuring both. He fell violently, but resumed work after three hours. The skin was deeply bruised for two or three weeks; diameter of bruise about three inches. Eight or nine months after the blow he began to feel weak; three months later the spleen was found to be enlarged; gradually quickness of breathing came on; he left his work in March last. When first discovered two years ago the spleen was about half its present size; probably, therefore, it had taken one year to attain that size; it seemed possible that after the blow micro-organisms from within had traversed the damaged intestine and invaded the similarly damaged spleen. (British Medical Journal, November 2, 1895.)

LEUKOMAIN POISONING.

Dr. Rachford begins his paper with the following:—This communication is offered as a sequel to the paper on the same subject which I read before this Association of American physicians last year. At that time I presented the experimental and clinical evidence upon which I based the opinion that leukomain poisoning is a most important phase of auto-intoxication, which may manifest itself in at least three distinct but closely allied clinical types, viz.:—(1) Leukomain headache (true migraine); (2) leukomain epilepsy (migrainous epilepsy); (3) leukomain gastric neurosis. Another year of work in this field has enabled me to separate still another clinical type of leukomain poisoning which I shall call, in conformity with the above nomenclature, (4) leukomain asthma. This form of asthma presents very much the same clinical picture as ordinary bronchial asthma. The attacks, as a rule, come on during the early morning hours, and vary in severity from a simple to the most intense dyspnœa. My impression is that this type of asthma is not uncommon, and that it goes to make up a not inconsiderable proportion of the asthmatic attacks which are classified under the comprehensive term, "bronchial asthma." However this may be, I am quite sure that the urine passed during certain of these asthmatic attacks contains a very great excess of paraxanthin and other leukomains of the uric acid group, and that the paraxanthin solution separated from the urine of these cases will, when injected into mice, produce intense dyspnœa with the other symptoms of paraxanthin poisoning. (Medical News, May 16, 1896.)

LUMBAGO.—Nature and Treatment of.

Dr. Albert Robin, of Paris, returns to this subject in a current issue of the *Bulletin Général de Thérapeutique.* The view that lumbago and many cases of torticollis are articular and not muscular affections is, as he admits, not entirely original with him, but he asserts correctly that most authorities look upon lumbago, at least, as essentially a muscular affection, being often described as a rheumatic myositis. Dr. Robin bases his theory of the articular nature of the trouble upon a number of facts, of which we can only summarise a few. He says, in the first place, that the points of greatest pain are usually in the median line over the vertebræ, or else over the sacro-iliac junctions. He calls attention also to the fact that the position of the patient is such as would not be easily tolerated if the muscles were mainly at fault. The sufferer stands with the body bent slightly forward, sometimes bending to one side, a position which would put the erector muscles of the back in a state of tension that should be uncomfortable and painful.

On the other hand, this position is, he thinks, best adapted to relieve the articular surfaces from pressure. The muscles themselves, also, he states, are usually less painful than the joints. Dr. Robin's reasoning is ingenious, and we believe that there can be no doubt but that in many cases, at least, the joints and their supporting ligaments are really the most at fault. The more practical point connected with this subject is that of the treatment of lumbago. In most cases, of course, patients get well rather promptly by simply being put in bed, kept warm, and their symptoms relieved by local applications and the milder anodyne remedies. Electrical applications, blisters, and various forms of counter-irritation also are useful. Robin asserts, however, that he has discovered a drug which he thinks has a certain specific action on lumbagoes, namely, jaborandi. In acute cases, and in many of the more chronic forms, the use of the infusion of the leaves is attended, according to this writer, with the greatest success. He gives the infusion of the leaves, a form of preparation which we believe is rarely employed in this country. This infusion is taken in the morning, and repeated in a day or two, if needed. It produces profuse perspiration and salivation, with, in acute cases, immediate relief of symptoms. In the more chronic cases the dose is to be repeated three or four times. We see no reason why, if the drug is really valuable, the simpler preparations, such as pilocarpin or the fluid extract, should not prove equally serviceable. Dr. Robin cautions his readers against the use of this drug, however, in all cases where there is any heart lesion. (New York Medical Record, October 26, 1895.)

MALARIAL CACHEXIA.—Treatment of.

Critzman (*Presse Médicale*, 1895, No. 68, p. 507) has reported four cases of chronic malarial cachexia presenting enlargement of the spleen, anæmia, and emaciation, successfully treated with splenic tissue and bone-marrow after the usual remedies, quinine, arsenic, hydrotherapy, &c., had failed. He administered daily rather more than an ounce and a half of finely chopped spleen from a young beef, admixed with the yoke of an egg and two drachms and a half of bone-marrow. Improvement soon set in, and in the course of two or three weeks became quite pronounced. (Medical News, January 18, 1896.)

MALARIAL PARASITES.

Surgeon Captain F. P. Maynard gives the following directions for staining the malarial parasite. The blood is spread by placing one cover-slip holding a drop of blood upon another, both being held with forceps (not with the fingers), and sliding them apart, choosing the slip that appears to be most evenly and thinly spread and rejecting the other. Various fixing agents were tried, corrosive sublimate solution (causes much distortion of the red cells), heat and simple drying (cause less but still too much distortion), and alcohol. The vapour of osmic acid (2 per cent. solution) was found to be much the best, the cover-slip being placed on the open mouth of the bottle for 10 to 15 seconds. For staining specimens thus fixed methylene blue and eosine were used at first and gave very variable but occasionally excellent results. Each stain replaces the other so readily and rapidly that the difficulty in staining by either for just the right length of time is very great. Ehrlich-Biondi-Heidenhain's triple stain and Mayer's hæmalum (hæmatëin) proved reliable stains. Acting on a suggestion of Dr. D. D. Cunningham, Delafield's hæmatoxylin and eosin were tried and gave by far the best and, which is not the case with methylene blue, enduring results. Cover-slips are placed 5 to 7 minutes in the hæmatoxylin, well-washed in distilled water, placed 1 to 3 minutes in a 2 per cent. aqueous solution of eosin, again washed in water, cleared in absolute alcohol, tinged with a few drops of an alcoholic solution of eosin, dried and mounted in xylol balsam. The whole process takes a quarter of an hour, less really as a series of slips can be passed through the different re-agents at the same time. (The Indian Lancet, December 1, 1895, p. 401.)

MUMPS.—Treatment of.

Parotitis is a very painful disease, and one that occasionally ends in serious and lasting consequences. The *Tribune Médicale* gives the following terse account of the treatment best adapted to the disease:—Isolate the patient, and let him rest in bed, taking light nourishment—milk, soup, and eggs. Apply the following over the swollen parts:—Hyoscyamus oil, chamomile oil, each 1 fluid ounce; Sydenham's laudanum, 1¼ fluid drachms. Cover with a layer of cotton. Keep the bowels regular and give three teaspoonsful daily of the following:—Sodium salicylate, grs. 75; sodium benzoate, grs. 150; juleps of orange-flowers, ℥i., linden-water, ℥iv. Rinse the mouth with the following antiseptic solution:—Thymol, gr. iv.; carbolic acid, gr. xv.; tincture of eucalyptus, ♏ 150; water, 1 quart. Also use it for irrigation of the ear. This treatment from the *Tribune Médicale* seems based on simple and straightforward grounds and may be summed up under three heads—isolation fever and pain, antisepsis. One of the most serious consequences of mumps is the severe form of nerve-deafness which sometimes follows it, which only yields to the pilocarpine treatment if caught sufficiently early. Some of our readers may remember that, at the last meeting of the British Medical Association, Dr. Dundas Grant, in opening the discussion on nerve-deafness, referred to this, and mentioned that jaborandi had a most excellent effect when given in the treatment of parotitis, relieving the pain and swelling in a comparatively short time, and acting almost like a specific. (Medical Times and Hospital Gazette, January 18, 1896.)

NUCLEIN.

Nuclein is the principal proteid found in the nuclei of cells, while the various nucleo-albumins, such as the caseinogen of milk and the so-called mucin of the bile, render a residue of insoluble nuclein after digestion. Lately this substance has been credited with a strong antitoxic power—an antitoxic power which it exerts indiscriminately. How it acts is not definitely known, but it is supposed to render inert the toxines produced by organisms in such diverse diseases as tuberculosis, scarlet fever, pneumonia, auto-intoxication, and even rheumatism. Papers by W. Jacobsohn on this subject will be found in the *Medical Record*, vol. xlvii., No. 18, and in the *New York Medical Journal*, vol. lxii., No. 3. In the latter he gives details of several cases of scarlet fever and measles in which the injection of a nuclein solution seemed to abort the attack and quell the complications. In two other papers, both of them published in the *Therapeutic Gazette*, M. O. Teigen (June 15, 1895) and R. W. Wilcox (August 15, 1895) lay stress on the power of nuclein to increase the number of leucocytes in the blood, a power which it is supposed to possess in common with antitubercular serum, antiphthisin, and cinnamic acid. To this increase of leucocytes the antitoxic properties of the drug are attributed. Teigen advocates the use of electricity over the affected part in cases of phthisis in addition to the administration of nuclein by hypodermic injection. Out of four undoubted cases of phthisis which he treated by this method two were very much improved. In Wilcox's cases the results were also very satisfactory.

Ch. P. Knapp ("Clinical Report on Nuclein," *New York Medical Journal*, April, 1895) and J. M. Bleyer ("Nuclein as a Defensive Proteid; Its Subcutaneous Administration in the Different Grades of Diphtheria, accompanied by a Clinical Report of Fifty-three Cases," *Ibid.*, April, 1895) published last spring some results of the use of nuclein. Knapp found that in three cases of tonsillitis, two of malaria, one of scarlet fever, one of tubercular glands, and three of diphtheria, the result was invariably satisfactory. Bleyer did not find it of so much use, as of nine early cases of true diphtheria two died, while all the three later cases proved fatal. Forty-one cases of follicular tonsillitis and false diphtheria, on the other hand, recovered rapidly. To turn to another aspect of the question of nuclein, it will be remembered that Horbaczewski some time ago brought forward the hypothesis that uric acid was formed chiefly by the breaking up of white blood corpuscles and from the nuclein in them. If this were the case, W. Weintraud ("Über den Einfluss des Nucleïns der Nahrung auf die Harnsäurebildung," *Berliner klin. Wochenschrift*, 1895, No. 19) argued that the amount of uric acid excreted should, in some degree at least, be dependent on the amount of nuclein ingested. He found by experiment that this actually occurred, and concluded that food containing much nuclein should be forbidden where an excess of uric acid was the cause of disease.

P. F. Richter, on the other hand (*Zeitschrift fur klin. Medicin*, Bd. xxvii., Hft. 3 u. 4), by estimating the uric acid excreted in diseases in which the number of leucocytes is increased or diminished, could only corroborate Horbaczewski's suggestion in part. In other cases also in which he artificially produced a diminution of the leucocytes by the administration of spermine and quinine, the decrease in the amount of uric acid did not correspond. (From Dr. Gillespie's Occasional Medical Periscope, Edinburgh Medical Journal, December, 1895.)

PHENACETIN.—Fatal Poisoning with.

Krönig (*Ber. klin. Woch.*, 1895, No. 46) has reported the case of a boy, 17 years old, who looked ill and depressed, and complained of pain referred to the occiput and also to the right hypochondrium. The face and body presented a dirty-yellow or ashy-gray colour ; the conjunctivæ were also yellowish, and the lips were cyanotic. The temperature was slightly elevated, and pulse and respiration accelerated. The liver was a little enlarged and of increased consistency ; the spleen considerably enlarged and of normal consistency. There was a purulent discharge from the right ear, with perforation of the tympanic membrane. A diagnosis of septicæmia of undetermined origin had been made, but the peculiar aspect of the patient suggested some form of intoxication attended with blood-destruction. Examination of the blood disclosed, in addition to an increased number of white corpuscles (mononuclear equally with polynuclear), destructive changes in the red cells — a true erythrolysis. Upon further inquiry it was now learned that the patient had received for the relief of occipital pain five powders of phenacetin of 15 grains each, of which he was to take one during the attack, but not more than two in 24 hours. After taking the fifth powder, at the end of three weeks, the patient was seized with vomiting, and a bluish-grey colour of the face and lips was observed. The bowels became loose, and the urine assumed the colour of chocolate. Finally, the skin generally presented a yellowish hue, while the lips, ears, hands, and feet became cyanotic in colour. Death took place, and the post-mortem examination confirmed the diagnosis of septicæmia, together with universal methemoglobinuria. Spleen and liver presented pronounced brownish discolouration. The kidneys were enlarged and discoloured and the seat of hemorrhage. The lower lobe of each lung was pneumonic. The gastric mucous membrane close to the pylorus was the seat of an irregular ulcer. (Medical News, December 14, 1895.)

POLYMYOSITIS, ACUTE.

By Dr. Herrick. The following are Dr. Herrick's conclusions:—(1) There is a definite disease primarily affecting many muscles of the human body and described as polymyositis acuta, pseudo-trichinosis, or dermatomyositis. (2) Inflammatory swelling of muscles, exanthem, splenic tumour, extension to the muscles of deglutition and of respiration, death characterise the most typical cases. (3) Atypical and milder cases indicate that either the disease may run a benign course or that in the absence of definite means of differential diagnosis forms etiologically differing are confused. (4) Trichinosis and polyneuritis must always be excluded. (5) Syphilis may attack many muscles and, resembling acute polymyositis, must be excluded. (6) The etiology is still unknown. (7) Three hypotheses can be advanced as to its cause:—(*a*) that it is due to a specific micro-organism (vegetable parasite); (*b*) that it is due to a chemical poison (toxin); (*c*) that it is due to an animal parasite (gregarina). (8) In doubtful cases the excised piece of muscle should be examined not alone for trichinæ and bacteria, but as well, by special methods, for protozoa. (9) Failure to find trichinæ in all areas showing inflammatory reaction, or even in the majority of such areas, does not exclude trichinosis as the primary cause of the myositis. Only repeated failure to find trichinæ after thorough examination enables one positively to assert that the case is not one of trichinosis. (10) Syphilitic myositis occurs in three forms—the gummous, the diffuse, the combined. (11) The diffuse syphilitic myositis is usually a late manifestation of syphilis; appears without definite exciting cause; affects no particular muscle by preference; often involves more than one muscle; may resemble acute polymyositis. (American Journal of the Medical Sciences, April, 1896.)

PSEUDOLEUKÆMIA SUCCESSFULLY TREATED WITH ARSENIC SUBCUTANEOUSLY.

Katzenstein (*Deutsches Archiv für klinische Medicin*, B. 56, H. 1, 2, p. 121) has reported the case of a man, 37 years old, presenting characteristic symptoms of pseudoleukæmia in whom a cure was effected by the subcutaneous injection of progressively increasing doses of solution of potassium arsenite. For two months the patient had observed glandular swellings throughout the whole body, and for several weeks a sense of oppressive pain beneath the left costal arch. He suffered also from insomnia, anorexia, and debility; and his appearance was anæmic, cachectic, and emaciated. Inguinal, axillary, cervical, and other lymphatic glands were enlarged, as was also the spleen. The erythrocytes numbered 4,720,000 to the c.mm., the leukocytes 12,200. The former were free from poikilocytosis and nuclei. Some of the multinuclear leukocytes were eosinophilous. The patient complained beside of intense prurigo. Epistaxis recurred from time to time, and the lower extremities were œdematous. In the course of six months in the neighbourhood of one hundred injections of solution of potassium arsenite were made in the back on either side of the vertebral column, with the result of effecting disappearance of both objective and subjective symptoms. At first 0·1 c.cm. (♏jss) properly diluted was injected, and the dose was gradually increased every third day 0·05 c.cm. (♏¾) until 1 c.cm. (♏xv) was injected daily, a free interval being permitted every two weeks. Finally, 0·6 c.cm. (♏ix) gradually increased to 1 c.cm. (♏xv) was injected twice daily. Then the doses were gradually reduced until the treatment was discontinued and the patient was dismissed as cured. At the time of report there had been no return of the symptoms for a year. The patient had a previous history of syphilis. (Medical News, November 23, 1895.)

RESPIRATION, ARTIFICIAL.—The Laborde Method.

As to the value of the rhythmical traction on the tongue laboratory experiments on animals, and clinical tests, now many times repeated, seem to show beyond controversy that when but one method of artificial respiration can be adopted, as in the case of a single helper in charge of an asphyxiated patient, the Laborde method is pre-eminently the best. Indeed, any form of artificial respiration, unless the tongue is drawn well forward, is about as successful in accomplishing its result as is the effort to fill a bottle without removing the cork. When more than one helper is at hand, the Laborde method should be supplemented by the Sylvester movements in the manner already described—*i.e.*, traction during inspiratory movemen of the arms, relaxation during expiratory movements. Becau of the ease of its application and its efficiency, the Labord method should be taught as the first and most efficient means of resuscitating the apparently dead. (From Dr. Edward Martin's paper in the Therapeutic Gazette, December 16, 1895.)

RHEUMATIC AFFECTIONS AND GOUT.—Distinction between.

The following is taken from Dr. Ernest Reynolds' paper. [For the purposes of this paper the chronic rheumatic affections are made to include rheumatoid arthritis.]—The point which I wish to bring forward does not hold good in acute rheumatic or acute gouty conditions, nor can it necessarily be applied to other joints than those of the hands. It must be remembered then that I shall deal only with chronic changes in the hands. In chronic rheumatism it will be found as a rule, to which there are very few exceptions, that the joints of the hands are symmetrically affected, that they are affected to an equal degree on the two sides, and that the deformities produced are similar and symmetrical. These statements hold good, however *bizarre* the deformities may be. Very rarely, although the joints affected are symmetrical, the deformities are asymmetrical, as in two cases I have seen. In one of these the deformities of the fingers of one hand showed flexion, extension, and flexion of the three joints of the fingers; whereas in the other hand they showed extension, flexion, extension. In the second case the middle finger of the left hand showed extension, flexion, extension; all the other fingers of the two hands being in a position of flexion, extension, and flexion. It should be mentioned that, in examining deformities of the hands, care must be taken to exclude those produced by Dupuytren's contractions or by old injuries, which, as a rule, produce asymmetrical deformities. When we examine the chronic changes in the hands produced by gout we shall find an entirely different state of affairs. If only a few joints are affected we shall see that they are quite asymmetrical, the extent of the affection is unequal, and the deformities produced are dissimilar. If all the joints of both hands are affected, as occasionally happens, then it will still be found that the amount of affection is very unequal, and the deformities are also quite different. This is a rule in gout to which I have seen no exception. (British Medical Journal, February 15, 1896.)

RHEUMATISM, ACUTE.—Salophen in.

Dr. Pearse relates 14 cases in which he obtained good results with salophen. The following is taken from his remarks:—The average daily amount given was a drachm-and-a-half in fifteen-grain doses every four hours. This could be continued indefinitely with no untoward effects. One patient took fifteen grains every four hours during the day for a month. With each fifteen grains of salophen, fifteen or twenty grains of bicarbonate of sodium were combined. Led by the fact that there is less probability of cardiac complications in the alkaline treatment than in any other, Dr. Flint advised the combination [illegible] alicylate principle was followed in the use of salophen. There were no symptoms of gastric irritation, cardiac depression, or renal or cerebral involvement in any one of the salophen cases which could be attributed directly to salophen. I do not mean to under-estimate the value of the salicylate treatment; vast clinical researches have proved its great worth, but we are all compelled to recognise the dangers attending its careless use. If salophen will act as well in a prolonged and thorough trial as it has in my small series, and continue devoid of dangerous properties, it will eventually replace completely more dangerous methods of treatment. (New York Medical Journal, March 14, 1896.)

Rheumatism, Acute.—Treatment of.

In *L'Union Médicale* of November 2, 1895, is an article on this subject of considerable interest. The author considers that salicylate of sodium is practically a specific, and recalls the fact that Dujardin-Beaumetz was in the habit of administering every two hours very large doses of the drug, preferring massive doses to its fractional administration, and believing that it was best given in syrup diluted with a copious drink taken at the same time. The most favourable time for the administration of these large doses of the salicylates is at night, as by this means the inconvenient concomitant effects (such as ringing in the ears and the sweats) are largely escaped by the patient going to sleep. The dose is to be repeated every twenty-four hours, being given twice with an hour interval. Usually the desired effects are obtained after as much as 60 to 120 grains are given. The author does not consider that the presence of endocarditis or pericarditis contra-indicates the employment of these large doses; the only contra-indications are the untoward effects which are commonly seen in connection with the ears and skin. A general contra-indication, however, in acute articular rheumatism is inactivity of the kidneys, particularly in pregnancy and in those cases in which the rheumatism is accompanied by albuminuria. Mention is made of the fact that Weiss has highly recommended the method of Bourget of using salicylic acid in an ointment about the inflamed joints. This ointment generally consists of salicylic acid, lanolin, and turpentine, of each 2½ drachms, and lard 3 ounces. This is placed about the joint and rubbed in as vigorously as the pain will allow, and the part is then bandaged with flannel. If for any reason salicylate of sodium or salicylic acid cannot be employed, it is recommended that pills composed as follows shall be administered:—℞ Salophen, 2 grains; extract of gentian, ¼ grain ; liquorice powder, sufficient to make one pill. Five of these pills are to be given in the morning and five at night. Attention is again called to the fact that the greatest care must be used in the administration of salicylic acid to pregnant women and in albuminuria, and it is thought best under these circumstances to substitute antipyrin for it, particularly if the pain is severe. Mention is made of exalgine, but it does not receive very favourable consideration. Hot baths are sometimes of value if the patient is strong enough to stand them ; they nearly always bring relief of pain and cause sleep, but, on the other hand, they may produce exhausting sweats. (The Therapeutic Gazette, February 15, 1896.)

RHEUMATISM, MONO-ARTICULAR.

Professor Heidenhain (*Deut. Med. Woch.*, 1895, No. 31) is of the opinion that mono-articular rheumatism is a much more common manifestation of rheumatism than we are led to believe from the teachings on this point, as presented by such authorities as Strümpell and Niemeyer-Seitz, whose words he quotes. His opinion is based upon observations of cases in the polyclinic at Griefswald, and especially upon the results of treatment with sodium salicylate. In the arrangement of his statistics he was able to exclude, as possible causes of the joint condition, tuberculosis, osteomyelitis,. traumatism, gonorrhœa and syphilis, by history as well as by therapeutic tests, and in view of the results establishes the diagnosis in 38 cases of mono-articular pain and tenderness and movement limitation as so many cases of mono-articular rheumatism. As to the joints affected the table runs as follows :—Shoulder 13, wrist 5, elbow 4, knee 4, ankle 4, hip 2, tarsus 2, carpometacarpal 1, finger 1, toe 1, jaw 1. Professor Heidenhain suggests that a cause for many cases of endocarditis may be found in the teaching afforded by his experience here recorded, the reports of which give no account of an attack of articular rheumatism according to the generally accepted diagnosis. (Dr. Hamilton's abstract in the Montreal Medical Journal, December, 1895).

ROCKY MOUNTAINS.

In Dr. Alfred Mann's article in the *Medical News*, February 22, 1896, the following observations occur :—Incipient, uncomplicated cases, as a rule, do best in a dry, tonic climate of fairly high altitude. Weak heart, when not due to organic lesion, unless very pronounced, is not a contra-indication for an altitude of 5,000 to 6,000 feet. On the contrary, as the general health improves, the heart usually grows stronger and the pulse becomes slower. For cases somewhat further advanced, with breaking down of lung tissue, but otherwise in fair condition, the same climate is useful; that is, high altitude, and a cool, dry station. Such a climate is furnished by Colorado. One weighty reason for the selection of Colorado as the residing-place of invalids is the ease with which, in its numerous progressive towns and well-settled rural districts, suitable food and accommodations can be procured. In this respect there is still much left to be desired in most of the resorts of New Mexico and Arizona. In the case of those far advanced in the course of the disease, with large cavities, &c., it is often advisable, even if not absolutely necessary, that at least the coldest months of the year, say from the middle of December to the middle of May, be spent in a warmer climate free from very cold weather. This can be found in New Mexico, Arizona, and old Mexico. I do not here mention California, for my belief is that the popular and populous parts of Southern California are inferior in value for the purpose under consideration to the dry regions mentioned above. Cases with organic heart lesion or other serious complication, and those which seem to offer slight resistance to the progress of the disease, are usually better off at low altitudes, and these often bear a fairly warm summer climate quite well. Cases far advanced, with well-marked cavities, high fever, and great general debility, should not, as a rule, be sent from home. Sometimes it is advisable for a patient to spend the hottest part of the summer in some of the lovely, cool mountain parts of Colorado: the autumn in the altitude of Colorado Springs or Denver, and the winter and early spring in a more southern latitude.

SALOPHEN IN INFLUENZA.

R. Drews (*Centralbl. f. inn. Med.*, November 23, 1895) speaks of the value of salophen in the nervous forms of influenza. After referring to the favourable reports of the use of this drug by Claus and Hennig, the author observes that in the more recent epidemics of influenza nervous symptoms have been more prominent than in the first epidemic. These symptoms consist in headache, vertigo, prostration, and more or less sweating, together with pains in the back, neuralgias, &c. Antipyrine has proved serviceable in the respiratory and gastro-intestinal forms of the disease, but it has not been so useful in influenza with nervous symptoms. The author says that in such cases he has used salophen with good results, and that its action is prompt, sure, and more rapid than the ordinary salicylates. The maximum daily dose given was 5 grains to 6 grains. In delicate subjects 0·5 grains or 0·75 grains given at first every two or three hours sufficed to arrest the neuralgic pains in two or three days. No unpleasant symptoms were ever observed. Other advantages are that salophen has no smell or taste, and is wholly without poisonous properties. (British Medical Journal Epitome, February 1, 1896.)

SCARLET FEVER.—Disinfection of Mouth in.

At the Société des Hôpitaux, in Paris, M. Lemoine (Am. M.-S. Bull., 1896, ix, 150) recently advanced the theory that the period of contagion in scarlatina is at the beginning rather than at the close of the disease. He regards the secretions of the mouth and pharynx as the dangerous elements rather than the desquamating epithelium, and considers that the disinfection of these cavities should take first rank among prophylactic measures, and that the period of isolation to which cases of scarlatina are at present subjected should be considerably shortened. This view is important, in that other eruptive diseases, as measles and smallpox, may perhaps be transmitted by the same means. Until the pathology of these diseases is better known, it seems rational treatment to disinfect the mouth and pharynx, thus possibly rendering a service both to the patient and to the attendants. (Pediatrics, March 15, 1896.)

Scarlet Fever.—Return Cases of.

The appearance of scarlet fever in a household, to which a member of the family has recently returned from a fever hospital, is a matter of great importance, which frequently leads to the passing of a hasty and illogical censure upon the medical officers of the hospital. Birdwood (Annual Report of Metropolitan Asylums Board, 1894) reports from the North-Eastern Hospital 61 such cases out of 1,793 discharges, a percentage of 3·4. It is highly probable that many of these instances are mere coincidences, or it may be that the house itself is in an insanitary condition, and probably infected articles which are put away on the removal of the patient to the hospital are brought out again after his return, and thus become the source of the secondary infection. A very thorough examination of the conditions under which these so-called "return cases" may arise has been made by Chalmers in Glasgow (*Lancet*, June 22, 1895). From the three fever hospitals of that city, during the year 1894, patients to the number of 2,593 were sent to their homes after an attack of scarlet fever, and reinfection thereupon ensued in 70 of the houses to which these patients returned, or in 2·6 per cent. In 93 per cent. of these cases the secondary illness appeared within fourteen days of the return. In 19 per cent. the cause of the secondary illness seemed to lie in the reappearance of desquamation, or in the recurrence of discharge from nose or ear in the original patient after leaving hospital. In the remainder no such cause was found, and it consequently appears probable that the patient may still remain infective, although he is entirely free from desquamation and shows no trace of any post-scarlatinal condition. As regards this hidden infectivity, there appears to be some evidence of its connection with the amount of air-space allotted to each patient during his stay in hospital, and there appears to be a tendency to the appearance of secondary infection when the returning patient who is the apparent cause of that infection has been treated in a ward in which there is some degree of overcrowding. In whatever part of the body this infective power may dwell, whether in the breath or in the skin, the important practical conclusion is drawn that isolation of a patient from children should be strictly maintained as far as possible for some time after his return from the hospital. In 93 per cent. of those return cases there was "community of life either in sleeping or while at meals or at play." (From Dr. Ha[illegible]kin's abstract in the Practitioner, December, 1895.)

SEA-SICKNESS.—Prevention of.

Dr. Charteris (*The Practitioner*, February, 1896), says that it cannot be too strongly insisted upon that the diet for the first two days in a long voyage should be "dry" and "spare." No full meal should be indulged in. Soups and pastries should never be taken. In short voyages the same injunction should be made, and the passenger should take no food or liquid if the voyage only lasts a few hours; if it be for a longer period, the smallest modicum of these should suffice. But experience shows that diet, though very important as a prophylactic, will not be sufficient to guarantee exemption from sea-sickness. Other means must be adopted, and of these the most successful are:—(1) A clearing out of the *primæ viæ*, not by a saline, but by a liver-acting aperient such as calomel or blue pill, which should be taken on the night before embarkation, and be followed on the morning by a saline purgative such as citrate of magnesium. (2) When on board the steamer, if the passage be by the night service, a full dose of the solution of chloralamide and bromide of potassium known as chlorobrom should be taken, and the passenger should at once retire to his cabin and rest and sleep. If by the day service, a minimum dose should be taken; the passenger should remain on deck. Only under exceptional circumstances is a second dose necessary.

SERUM ANTI-STREPTOCOCCUS.—Treatment with.

W. Dubreuilh (*Journ. de Méd. de Bordeaux*, January 26, 1896).—In this communication a short review is given of the results of the serum treatment of puerperal fever and erysipelas, the two most marked manifestations of the development in the body of the streptococcus pyogenes. The earliest experiments on animals were not very encouraging, since a considerable number of the rabbits which were inoculated with a view to immunisation died during the proceedings. Charrin, Roger, and Marmorek, however, overcame these difficulties, and found that the injection into healthy animals of the serum withdrawn from those which had been successfully immunised did prevent the development of virulent organisms after inoculation. It was also soon established that the general pheuomena, septicæmia, &c., were more readily influenced than local manifestations, such as circumscribed abscesses and peritonitis. Since then the clinical results of this treatment have been such as to warrant us in ascribing to it a success which cannot be denied. Five cases of septicæmic puerperal fever have been recorded hitherto which were all of gravest severity, accompanied by high fever and without any local manifestations. In the later cases 80 to 100 c.cm. of the serum were injected in doses of from 20 to 25 c.cm., repeated once or twice a day. The first amelioration occurred in the appearance of the face and in the diminution of the strictly nervous phenomena, the patient falling into a natural sleep at the end of the first day. The temperature usually fell during the second day, and it was only at a somewhat later date that the local phenomena, such as the fœtid lochia, were improved. At the end of three or four days the patient is practically convalescent, and the subsequent period of weakness, which is usually so prolonged after a severe attack of puerperal fever, was in these cases remarkably short. It is interesting to note that the protection granted is apparently very limited in duration, since in one of the cases an attack of erysipelas, contracted from her mother, supervened very shortly afterwards. As to the results of the use of the serum in erysipelas, Marmorek's statistics, published in last March, gave 86 cases, 40 of which were so slight that they did not undergo the serum treatment, all recovering; whilst 46 graver cases received from 5 to 20 c.cm., and were all cured with the exception of an old woman, who died of pneumonia of pneumococcal origin. More recently Chantemesse has published the statistics of 1,055 cases of erysipelas, and contrasts the treatment and the results. It is probable, however, that the apparently bad results of the weak serum are to be attributed rather to a run of bad cases than to a failure in the serum. The first local modifications occur in about twenty-four hours, the patch of eruption ceasing to spread, the redness diminishing, and the pain ceasing. Desquamation was prompt, the cuticle separating in large flakes. If abscesses were present before treatment commenced but little change in their course was manifested; but it was rare for them to develop after the injections had been made.

The general effects were even more rapid in their onset than the local ones, the fever ceasing often on the first day, and a sense of well-being soon supervening. Other conditions besides the two mentioned above have also been treated by the serum, and with gratifying success. One case is of especial interest in that it consisted of a large boil in the corner of the mouth, and the good result of injection of the serum seems to indicate that possibly affections due to staphylococci may be controlled by this re-agent as well as those due to streptococci. (The Practitioner, March, 1896.)

SERUM TREATMENT OF ANTHRAX.

At the recent Congress of the Italian Society for Internal Medicine, Sclavo (*Semaine Médicale*, 1895, No. 54, p. 46[illegible]) related the results of experiments with the blood-serum of goats immunised to anthrax. Such serum injected into rabbits conferred immunity and displayed also therapeutic activity. An injection of from 5 to 10 c.cm. made twelve hours after the injection of a fatal dose of virulent anthrax-bacilli prevented death. A rabbit injected with protective serum twenty-four hours after receiving an injection of virulent anthrax-bacilli lived four days longer than a control-animal untreated with the serum. (Medical News, November 16, 1895.)

SERUM TREATMENT OF SMALLPOX.

The latest application of serotherapeutics is that of the injection of the serum from a vaccinated heifer against smallpox. Mons. Bectere (*Jour. des Practiciens*, 1896, No. 14) has found that it requires the introduction of a quantity equal to the hundredth part of the weight of the heifer to confer temporary immunity, or one-fiftieth to secure complete protection from subsequent inoculation of variolous virus. In man it is difficult to inject more than a fiftieth part of the weight, which would be about one and a half kilogrammes. The difference between the action of the serum and ordinary vaccine is that whilst the latter requires a period of incubation before the immunity which is permanent is established, with the serum the immunity is immediate, but depends for its completeness on the quantity injected. It has, moreover, the property common to these serums of rendering the organism rapidly unfit for the propagation of the virus, and so is indicated when the smallpox is already established. A number of adults have already been treated successfully, but it seems especially indicated in young children, in whom the disease is so much more fatal. In a child twenty-one days old where the symptoms that had already developed led to an unfavourable prognosis, the serum was injected on the second day in the subcutaneous cellular tissue of the thighs and abdomen to the amount of one-twentieth of the weight. No general or local disturbance followed, and recovery ensued. A brother of this child, three years of age, treated in the ordinary way without injection of serum, succumbed. (Dr. Oscar Jennings' Abstract in Pediatrics, May 1, 1896.)

SERUM TREATMENT OF TETANUS.

Nocard (*Bulletin de l' Acad. de Medicine,* October 22, 1895) points out that the difference in the value of this treatment as applied to diphtheria and tetanus depends upon the evanescence of the immunisation. In the former a local lesion precedes the general poisoning, and one can intervene before the intoxication has become general; in the latter the first symptoms of the disease are those of general intoxication, when it is already too late for treatment. The efficacy of antitoxic serum depends directly upon the speediness with which its injection follows the introduction of the pathogenic microbe or its products. If an animal is poisoned by strychnine, tetanic convulsions come on almost immediately; after the introduction of tetanus toxin no convulsions appear—even with a five-fold fatal dose—for twenty to thirty hours or more. In the meantime the poison has no doubt been exerting its specific action on the cells of the animal, so that the injection of tetanus antitoxin at the time of the appearance of convulsions is useless, even when accompanied by excision or amputation of the part into which the toxin has been introduced. Nocard, therefore, considers that we must, for the present at any rate, abandon the hope of curing an established case of tetanus, since the injection of antitetanic serum has but little influence on the course of the disease. If one could, however, foresee which wounds would be likely to give rise to tetanus, prophylactic inoculation would undoubtedly be of great service. It might be used, for instance, in countries where umbilical tetanus kills 20 to 40 per cent. of newborn children, or in the New Hebrides, where wounds by the arrows of the aborigines are speedily followed by tetanus. Even in France the preventive treatment is being used by many surgeons in the case of certain wounds—by firearms, machinery crushes, or when fouled by cultivated earth—likely to cause tetanus. A still more promising field is that of veterinary surgery, where tetanus so often follows the minor operations of docking, castration, shoeing, &c. Nocard has, since December, 1894, distributed antitetanic serum to 26 veterinary practitioners, who have employed it in 375 operations, no animal developing tetanus, while among uninoculated animals no fewer than 55 cases of tetanus appeared. All the operators agree as to the great diminution of the disease resulting from the preventive treatment. Details and a table are given, and the author feels justified in concluding that if the curative treatment of tetanus is yet to seek the incidence of the disease can be greatly diminished by prophylactic methods. (British Medical Journal Epitome, November 23, 1895.)

SERUM TREATMENT OF TYPHOID FEVER.

A recent cablegram announces that a serum cure for typhoid fever has been discovered at the Pasteur Institute in Paris. For some time past a large number of scientific men in Europe and elsewhere have been prosecuting researches with the object of obtaining such a serum as this, and many of them have been fairly successful. The serum is usually prepared in a similar manner to that for diphtheria, but, instead of a horse, some experimenters (Peiper, Beumer, &c.) have made use of a sheep, others (Klemperer, Levy, &c.) of a dog. At the Congress for Internal Medicine held at Munich last year, Peiper and Beumer showed that the toxin of typhoid cultivations is contained chiefly in the bacilli themselves, for after passing a cultivation through a Chamberland filter the filtrate was less virulent than before. The bacilli are killed, without damage to the virulence of the cultivation, by warming for an hour at 55° to 60° C. Their recent experiments show that, by repeatedly injecting small quantities of virulent cultivations into sheep, antitoxic substances are formed in the organism which prevent the poisonous action from showing itself. The action of this antitoxic serum depends on its power of destroying, not the bacteria, but the poison. By injecting previously, or at the same time, antitoxic serum, mice and guinea-pigs were protected with certainty against double or treble the fatal dose of a virulent cultivation, and, even if injected with the antitoxin, one to four hours after the fatal dose was given they could be cured. These authors instituted a series of experiments on various animals with the object of obtaining an antitoxin similar to those of diphtheria and tetanus. They obtained, by injecting sheep for three months with sterile broth-cultures of the typhoid bacillus, a serum which had marked antitoxic properties, though it had no direct power of destroying bacilli. For immunising white mice, half to one drop was sufficient to protect against the fatal dose. For guinea-pigs, 0·07 c.cm. to 0·08 c.m. serum completely protected 100 grammes of animal against the fatal dose. The serum has curative powers, since of five guinea-pigs treated one hour after injection, none died; of five treated two hours after injection, none died; of five treated three hours after injection, three died; and of five treated four hours after injection, one died. The effects of injection with typho-toxin are definitely seen in from one to three hours after injection, and as a rule the animal dies in 12-24 hours after a fatal dose has been administered. In every case animals treated for a long time with typho-toxin yielded a serum which had immunising and curative powers. (Australian Medical Gazette, March 20, 1896.)

SNAKE-VENOM ANTITOXIN.

Mr. E. H. Hankin (*Indian Medical Gazette*, 1896, No. 2) states that the poison secreted by the microbes of tetanus and diphtheria are closely allied to, if not indistinguishable chemically from, the poisons secreted by venomous snakes. Mitchell and Wolfenden have discovered that the venom of snakes owes its properties to the presence of a poisonous albumen, that of the cobra, according to the author, being so active that for the mouse the lethal dose of the dried poison has been found to be no more than the thirteenth-millionth part of its body-weight. Sewall showed in 1887 that it was possible to make pigeons immune against rattlesnake-venom by injecting into them a series of minute doses of this substance. The question of the possibility of producing antitoxins which might neutralise the poison of venomous snakes has been taken up by Calmette and Fraser. Both have succeeded in producing a high degree of immunity against snake-poison in animals, and both have found that serum of such animals possesses the power of neutralising cobra-venom. The former claims that the activity of his antivenine is ten thousand units. There is little doubt that antivenine would produce immunity in a safe and easy way if injected an hour previous to the bite, and in a small dose. While it is easy to produce an immediate though temporary immunity, it is comparatively difficult to effect a cure when once the symptoms have arisen. Hence, the one hope of success is to inject the remedy at a sufficiently early stage after the bite. The limb should be well ligatured, in hope that the remedy may be absorbed into the system in advance of the poison. Since death within half an hour after the bite of a venomous snake is the exception, and since, as a rule, more than three hours elapse before the fatal issue, and further that antivenine, even when used an hour and a half after the bite of extremely venomous snakes, has been found to be efficacious, there is good reason for expecting favourable results from this treatment, which has been found to be active against the poison of all species of snakes in which it has hitherto been tried. The injection is made under antiseptic precautions, into the subcutaneous cellular tissue of the flank. Then with the same syringe injections of aqueous solutions of lime chloride (1 to 60) are made about the bite which has been previously washed with the same solution. Neither alcohol nor ammonia should be administered, since these may interfere with the action of the remedy. (American Journal of the Medical Sciences, May, 1896.)

SPLENIC ANÆMIA.—Treatment of.

Köster (*Centralbl. f. inn. Med.*, January 25, 1896) relates a case successfully treated by oxygen inhalations. A patient, aged 44, had an attack of influenza two years previously, after which he began to suffer from general weakness, dyspnœa, palpitation. On admission the complexion had a slightly yellowish tinge. The spleen was enlarged, and extended forwards as far as the left mammary line. The red blood-cells numbered 800,000 in a c.mm., and there were numerous poikilocytes and microcytes, as well as a few esinophile cells; the white cells were not increased. The hæmoglobin stood at 25 per cent. Delirium was present at night. The patient was treated with arsenic and quinine, but he steadily became worse. The dyspnœa became more marked, and the red cells further decreased. Some œdema of the legs appeared. The patient was made to inhale 4 litres of oxygen, and this was repeated every day. Considerable improvement at once set in. In two days the splenic enlargement began to decrease. The red cells also increased, but poikilocytes and microcytes were still abundantly present. There were no macrocytes or nucleated red cells. The hæmoglobin now stood at 45 per cent. In a month's time, when the patient left the hospital, the red cells numbered 3,800,000, and the hæmoglobin had increased to 75 per cent. Two months later the spleen was of normal size, and the patient was well. The diagnosis of splenic anæmia or pseudo-leukæmia was undoubted. Under arsenic and quinine the disease became worse. The great dyspnœa and diminution of red cells in this case were striking. Oxygen inhalations were had recourse to with little hope of success, as recovery appeared almost impossible. The author describes a very simple method of fitting up the apparatus for oxygen inhalation, consisting chiefly of litre flasks, a small funnel for a mouthpiece, &c. Whether the result was directly due to the oxygen or whether time was thus allowed for the arsenic to act cannot be definitely stated, but the immediate improvement must show that the oxygen inhalations had something to do with the results obtained. (British Medical Journal Epitome, February 22, 1896.)

STRYCHNINE POISONING TREATED BY SI HOURS' APPLICATION OF CHLOROFORM.

The following is taken from Mr. Lloyd's paper:—Mrs. W., primipara, 36, was delivered of a still-born child, at full time, on December 2, 1894. On December 11 she developed acute symptoms of septicæmia, which ran a course of many weeks, and amidst other treatment hypodermic injections of strychnia were ordered. The strychnia was injected every four hours for fifty-two hours, the last injection being given at 7 p.m. on December 14, and at 10.15 p.m. on that evening the patient was perspiring sensibly, complained of a peculiar feeling in her head and a strange sensation not exactly of faintness but like it; also a little difficulty in opening her mouth widely. She had a peculiar feeling all over, especially in the region of the heart. I attributed all these symptoms to the strychnia and no more was given. Well-marked symptoms of strychnine poisoning appeared, and chloroform was administered on two occasions for two hours continuously. The symptoms gradually disappeared in the course of a day. The time during which chloroform was administered was six hours and seven minutes during a period of nine hours and five minutes, and the amount of chloroform used was nine-and-a-half ounces. The patient ultimately recovered from the septicæmia. I regret that the notes of the exact amount of strychnia administered (to the best of my belief the total amount of strychnia injected was equivalent to rather more than half-a-grain) have been mislaid, but the hypodermic injections of medicinal doses of the drug were made every four hours during fifty-two hours. The obscure symptoms which led to the discontinuance of the drug were not complained of until three hours after the last injection, and not fully developed until more than ten hours after, when the administration of chloroform vapour was commenced, pointing clearly to the cumulative effect of strychnine. I desire to call your attention also to the very partial anæsthetisation necessary to control the spasms, and the fact that the chloroform did not give rise to vomiting. The difficulty or inability to swallow, and the promptness with which rectal injections are expelled in cases of strychnia poisoning render medication by hypodermic injection and inhalation of vapour especially valuable methods of treatment, and, therefore, when the strychnia has been swallowed apomorphia by hypodermic injection is a most suitable emetic; and chloroform by inhalation another most applicable antidote when the spasms are severe. (Medical Press and Circular, December 18, 1895.)

SYPHILIS.—Treatment of.

Dr. Brooke, in his paper, refers to Dr. J. H. White's enquiries into this subject, which agree with his own:—(1) The hypodermic employment of quicksilver salts in the treatment of syphilis is widely spread over the European Continent, perhaps with the exception of France. (The general practitioners seem everywhere to adhere largely to the internal medication, but in Germany and Austria the injection method is extensively employed.) (2) Whilst all the numerous preparations of mercury are brought into use, the sublimate is the favourite; then, in order, calomel, salicylate of mercury, yellow oxide, sozoiodolate, and oleum cinereum; the others appear to have only a few adherents. (3) The soluble preparations are much preferred to the insoluble. (4) In respect to rapidity and durability of effect calomel holds the first place. (5) In the parts of Europe above-mentioned, it seems certain that the injection treatment, including intra-muscular injections, is employed as the general method of treating syphilis. (6) The average duration of the treatment cannot be determined with accuracy, but it ought to be continued until the symptoms have completely disappeared. (7) The views of the correspondents as to the disadvantages and untoward results of the treatment prove that they are not nearly so serious and so frequent as they are supposed to be; they are far more frequent with the insoluble than the soluble salts. According to the general opinion of the correspondents, all serious complications can be avoided by care and cleanliness (?). Some few have a different experience. Accidents, which may occur in any form of mercurial treatment, ought not, of course, to be attributed to the hypodermic method. (8) The question as to whether the injection treatment is a well-founded method was unanimously answered in the affirmative. (9) In answer to the inquiry whether the hypodermic method ought to be regarded as the regular method of syphilitic treatment, its further employment was considered by almost all to be desirable, only a few proposing certain limitations and reservations. (10) The answer seemed undoubtedly to justify the conclusion that in the medical head-centres of the Continent very little or even no mercury was now given internally, and that everywhere in the countries previously mentioned the subcutaneous method of administering mercury for syphilis was driving out the administration by the mouth. (Medical Chronicle, October 1896.)

THYREO-ANTITOXIN.

Dr. Sigmund Fränkel thus concludes his article:—This, the active substance of thyroid gland, is a pure chemical body, of well-defined chemical properties, present in considerable quantity in the gland substance; and it will prove to be the body which contains all the therapeutic properties of the thyroid gland, the more so as its action on the circulation is sufficient to explain all its other action as regards resorption and metabolism. We are now able to give therapeutically in exact doses a pure chemical body, instead of the thyroid gland or its extracts, the composition and the quantity of the active principle of which we do not know. We are furthermore not sure that these crude preparations are free from ptomaines; only recently a case of malignant œdema following thyroid feeding has been reported. The active principle is odourless, and its taste is like that of an extract of beef. The clinician can now experiment with this pure substance, and exclude many of the cases where either no action at all or some injury has been produced. It must furthermore be remembered that many of the thyroid preparations on the market are inert in consequence of faulty methods of preparation. The result of this investigation shows that chemical analysis only, combined with clinical experiment, can explain the physiological and therapeutical actions of the organic extracts. There is no doubt that chemical investigation of other organs and of blood serum will show that there are still many unrecognised chemical bodies present in small amount in the organism which exert a powerful influence in the way of protection against infection, a fact which has already been proved with regard to antitoxic serum. The time is not far off when a chemist can make these pure substances and afterward prove them experimentally, perhaps make them synthetically, and so give to the physician many new drugs in a pure form and one that will permit of exact dosage. (Medical Record, January 11, 1896.)

THYROID FEEDING.

Dr. Wilhelm Knoepfelmacher (*Wien. klin. Woch.*, 1895, No. 41) has made use of thyroid extract in tablet form in 22 cases of struma. The duration of the treatment varied from six weeks upward. In 11 cases there was marked diminution, even to complete disappearance. In 5 others there was considerable, but not so marked, improvement. In the remaining cases the treatment was without result. In the 5 cases in which the treatment was only partially successful, potassium iodide internally and iodine ointment externally also failed. Four patients, who were seen from three to five months after the cessation of treatment, were found to be in the same condition as at its close, the explanation being apparently that in hyperplastic struma the gland substance functionally hypertrophies, and upon the administration of the extract this hypertrophy retrogrades, provided that secondary changes have not supervened. (American Journal of the Medical Sciences, January, 1896.)

Thyroid Feeding.

After relating a case of cretinism successfully treated, Dr. H. H. Vinke makes the following remarks:—It has been pointed out by other observers that cretins bear thyroid extracts particularly well, and symptoms of thyroidism do not occur in these patients nearly as readily as in acquired or surgical myxœdema. Thyroid extracts have been recommended of late in obesity, goitre, and in exophthalmic goitre. The rapid loss of weight, following the exhibition of thyroid extracts in a large number of cases of obesity, would seem to show that a lack of normal thyroid secretion is a prominent factor in the production of obesity, and that the judicious administration of thyroid extracts supplies this want. In recent years thyroid extract has been much employed by W. O. Taylor, Bruns, Kocher, and others in cases of simple benign goitre, and the results of this treatment have been found entirely satisfactory. In the young, particularly, thyroid-feeding is usually followed by a rapid decrease in the size of the tumour, or complete disappearance of the goitre. A cessation of treatment, however, has been followed by a return of the goitre. Thyroid juice has also been recommended in exophthalmic goitre, a disease which, it is now held, results from excessive thyroidisation. Most observers, like Auld, Eulenberg, Dr. H. W. Herman, of St. Louis, and others, have found that all the distressing symptoms of exophthalmos are aggravated by the administration of thyroid extracts, while Voisin claims excellent results for the treatment. (Medical News, March 21, 1896.)

THYROID FEEDING IN CRETINISM.

The following is taken from Drs. Frederick Peterson and Pearce Bailey's paper :—[A table is given which contains most, if not all, of the cases of sporadic cretinism, treated with thyroid, which have been reported with sufficient detail to render them valuable for statistical purposes.] From this summary it appears that under thyroid treatment the symptoms of myxœdema disappear from the child quite as readily as from the adult. In none of the cases quoted did the general œdematous symptoms fail to yield to the remedy, when it was properly and sufficiently applied. The skin became soft, the swellings disappeared, and the whole appearance of the patient was completely changed. The carrying out of the treatment of myxœdema is attended with fewer difficulties and dangers in children than in adults. In addition to the disappearance of the symptoms from the skin and subcutaneous tissues the treatment of sporadic cretinism has in some cases met with brilliant results by permitting a return of development and growth to children in whom these functions had been limited or arrested by the disease. But although marked changes in the mental and physical condition of cretins have occurred, it yet remains to be reported that these cases become the physical and intellectual equals of children who have never had myxœdema. Improvement consequent upon a return of development has been more constant in the body than in the brain. A large number of the reported cases have grown considerably taller and have acquired sufficient power and control of the limbs to enable them to walk, which had previously been impossible. The teeth, which have been absent or defective, begin to appear normally. Intellectual progress has been neither so constant nor so rapid. In nearly all the cases there has been noted some mental improvement, but in only a few has the power of speech been acquired when it previously had been absent. Although data sufficient to justify positive assertions are lacking it seems entirely in the range of possibility that if the treatment of sporadic cretinism were begun at the outset of the disease, before growth was seriously interfered with, it would permit the proper development of the child, without myxœdematous symptoms, as long as the thyroid was administered. These questions must find their solution in the future when the thyroid treatment will have been used for a time sufficiently long to justify conclusions as to the extent and permanency of its value. (Pediatrics, May 1, 1896.)

TYPHOID BACILLUS.

A very simple and certain method of isolating this bacillus has been lately discovered by Dr. Elsner, Assistant Physician at Prof. Koch's Bacteriological Institute. After boiling gelatin together with an infusion of potatoes he adds a quantity of soda and filters and sterilises the mixture, which is then put into tubes filled with a one per cent. solution of iodide of potassium. The tubes are then inoculated with the dejecta, and the gelatin is deposited on glass plates in the usual way. The researches of Dr. Elsner have proved that all bacteria perish in the iodide of potassium gelatin except the bacillus of enteric fever and the bacteria coli commune. After twenty-four hours the bacillus of enteric fever is scarcely visible on the gelatin, but the colonies of bacterium coli are already somewhat large at this period. After forty-eight hours the colonies of the enteric fever bacillus become visible as small clear masses like drops of water, whereas those of the bacterium coli are large and of a dark-brown colour. No other bacteria of the dejecta besides the two above-named are to be seen. Dr. Elsner has published twelve cases where he found the bacillus after forty-eight hours in every stage of the illness. The number of the bacilli decreased as soon as the temperature became lower. In one case complicated with thrombosis of both crural veins they were present even after thirty-eight days. If after the cessation of the fever the bacilli are still visible in considerable quantity a relapse is probable. Prof. Brieger suggests that the dejecta of persons who have to do with enteric fever patients, such as nurses, servants, &c., should be regularly examined. If bacilli are found these persons must be supposed to be in the stage of incubation, and full doses of calomel may be able to prevent the development of the illness. The great importance of Dr. Elsner's discovery from a prophylactic and therapeutic point of view is obvious. (The Lancet, January 4, 1896.)

Typhoid Bacillus.—Behaviour of in Water.

E. O. Jordan, Ph.D., reports (*Medical News*, Philadelphia lxvii. 13) a series of experiments, from which he draws the following conclusion:—(1) The age of the typhoid-stock influences greatly the life of the bacilli introduced into water, a freshly isolated stock possessing distinctly greater vitality than one that has been under cultivation for some months. (2) The typhoid-bacillus, when introduced with proper precautions into sterilised Lake Michigan water does not multiply, but may, under certain conditions, maintain its vitality for upwards of 93 days. (3) The colon-bacillus, on the contrary, under similar conditions undergoes rapid multiplication, and may remain alive for upward of 262 days. (4) In re-distilled water, the typhoid-bacillus perishes much more speedily than in the water of the lake. (5) The quantity of organic matter (peptone) in re-distilled water influences fundamentally the life of the typhoid bacillus; so small an increment as 0·0126 organic nitrogen (parts per 100·000) causing a perceptible lengthening of life. (6) In sterilised lake-water the addition of a still smaller quantity of organic nitrogen—0·0012—affects the longevity of the typhoid bacilli introduced. (Dublin Journal of Medical Science, March, 1896.)

TYPHOID FEVER IN INFANTS.

(1) Typhoid fever occurs more frequently in children than is generally supposed. (2) The fact that ulceration and hemorrhage is much less frequent would explain the absence of pronounced abdominal symptoms. (3) The erratic, undeveloped and hypersensitive nerve centres in early child life, explain why the toxic secretions of the Eberth bacillus should make cerebral symptoms very pronounced. (4) Given a child of any age with or without intestinal disturbance, with a continued elevated temperature, evidence of cerebral disturbance, the possibility of the presence of the Eberth bacillus of typhoid fever should be constantly kept in mind.—*Journal of the American Medical Association.* (The Indian Lancet, November 16, 1895.)

TYPHOID FEVER.—Laryngeal Complications in.

Dr. Kanthack began by stating that opinions differed considerably with regard to the frequency of intra-laryngeal ulcerations during typhoid fever. Out of 61 fatal cases at St. Bartholomew's ulceration was found in 26 cases. The general situations were the tip and edges of the epiglottis, and in the neighbourhood of the vocal processes. With regard to the pathological nature of the lesions, are they specially typhogenetic? The assumption that the ulcers are decubital was at once set aside as erroneous. That they are produced by repeated injuries acting on debilitated tissue was more commended. That they were typho-genetic on the ground that the ulceration affected the adenoid tissue of the larynx is incorrect, as in the above regions no such tissue exists. That the evidence of the assumption from analogy of other parts, such as periostitis and parotitis, that the typhoid bacillus produces the ulcers is weak and insufficient. The bacteriological evidence is very incomplete, and such as there is points against their specifically typho-genetic nature. Clinical evidence too does not support the theory, as there seems to be no relationship between the symptoms of the fever and the laryngeal lesions. The explanation that the mucosa of the larynx being in the so-called "typhoid state" is readily injured and forms an easy portal for pyo-genetic cocci, and naturally this occurs most commonly in the most inefficiently vascularised portions, however, does not satisfy all cases. The lesions are undoubtedly caused by micro-organisms, and there is the strongest evidence that these are the pyo-cocci, and with very rare exceptions the typhoid bacillus. (Medical Press and Circular, March 4, 1896.)

Typhoid Fever.—The Heart in.

The *Mercredi médical*, for September 4, publishes a report of a recent meeting of the *Congrès français de médecine interne*, at which M. Mongour stated that he had ascertained that the first heart sound had disappeared during the course of typhoid fever in two patients. From the study of these cases and of analogous ones, he said, the following conclusions might be drawn:—(1) The disappearance of the first heart sound at the apex or at the base, at whatever stage of the disease it occurred, had no grave prognostic signification if the number of the pulsations did not exceed a hundred and ten. If, however, they exceeded this number, the disappearance of the systolic murmur might be considered as a fatal sign. (2) While this disappearance appeared to be connected with the existence of myocarditis, the cardiac acceleration seemed rather to depend on a toxic action on the nervous centres. This second tendency of the toxic agent was much more serious than myocarditis, which was generally cured. (New York Medical Journal, October 5, 1895.)

URÆMIA.

In his article on leukomain poisoning (see *Synopsis*, p. 19) Dr. Rachford says he is convinced that paraxanthin is a very important factor in producing the symptom complex which we call uræmia. In considering this subject, I would ask that the following statements be kept in mind:—(1) Paraxanthin poisoning in the mouse is characterised by an increased reflex excitability which is followed by stupor, dyspnœa, and convulsions. The convulsions are in the beginning clonic and then become tonic or tetanic. (2) In this and previous communications I have demonstrated that paraxanthin may be an important factor in producing the following symptoms, viz., headache, gastric pain and gastric irritation, asthma and convulsions. (3) The most characteristic symptoms of uræmia are headache, gastric irritation, dyspepsia, stupor, muscular twitchings, and convulsions. (Medical News, May 16, 1896.)

VASO-DILATORS.—New.

Dr. J. B. Bradbury (*The Lancet*, 1895) has investigated erythrol and mannitol nitrates; also those of the sugars—dextrose, levulose, and saccharose nitrates. These are less soluble than other nitrates, and therefore have a correspondingly weaker effect, but their action is more prolonged. Considering the first two named above, their therapeutic indications can be given as chiefly when the heart is labouring under increased work imposed upon it by contracted arteries. The difficulty hitherto has been not so much to reduce arterial tension as to keep it constantly below a certain level. Both nitro-glycerine and sodium nitrite have been used, but their administration has been attended with some inconvenience, notably that their action is so transient that the doses must be repeated at two-hours' intervals in order to produce continuous low tension. On the other hand, with the substances above named, the tension is not brought so low, but the reduction is of longer duration and the pressure is less liable to fluctuation. Further, they are free from poisonous properties, a quality readily explained by their slight solubility. The conditions under which these remedies may be used are cardiac pain, chronic Bright's disease, aneurism, Raynaud's disease, dyspnœa, headache, nervous diseases, as migraine and neuralgia, and various forms of poisoning, as from opium and coal-gas, vomiting from pregnancy and sea-sickness, lienteric diarrhœa, diabetes mellitus, and hysterical paralyses. The dose of the solid organic nitrate may be taken as one grain, but more may be given if necessary in pill, tablet, or in alcoholic solution. The latter is preferred. Of the erythrol nitrate, 1 to 60 aqueous solution, in drachm doses. Of the mannitol nitrate, 1 to 100 aqueous solution, in dose of from one and a half to two drachms. Both solutions, thus made, are stable and free from irritating properties. (American Journal of the Medical Sciences, February, 1896.)

AFFECTIONS OF THE NERVOUS SYSTEM.

ALCOHOLIC NEURITIS AND PULMONARY TUBERCULOSIS.

Dr. Kelgnac arrives at the following conclusions:—(1) The subjects of alcoholic paralysis are peculiarly liable to pulmonary tuberculosis. (2) A recognition of this fact is of considerable importance in arriving at an early and complete diagnosis and in forming a reliable prognosis. (3) It is desirable to treat cases of alcoholic paralysis in special hospitals, in country homes, or in healthy private houses, rather than in the almost unavoidably tubercle-contaminated wards of a general hospital. (4) The necessity for immediate removal of all alcohol from these cases and its replacement by nutritious diet. (5) The careful avoidance of causes leading to, and the necessity for early treatment of, all catarrhal conditions of the respiratory passages and congested states of the lungs. (Medical Chronicle, December, 1895.)

ALCOHOLISM.—Treatment of.

By Dr. Dunham (*Quarterly Journal of Inebriety*, October, 1895). The excitable stages are best controlled by chloral and bromides; or when there is much delirium, with a strong pulse, hypodermic injections of hydrobromate of hyoscine, $\frac{1}{120}$ to $\frac{1}{100}$ grain, to be repeated in six hours. In other cases smaller doses than the above will prevent the unpleasant effects of hyoscine and yet have a good result on the cerebral congestion. Stimulants should be rapidly withdrawn, and when given should be administered in milk and other foods, but never should be given clear or "straight." If there is much nausea, it can be controlled by small doses of calomel and bismuth, frequently repeated, with nourishment, given a little at a time and often. As soon as the patient is able to take nourishment it should be fluid in character and large in quantity, highly seasoned. If the bowels are constipated they should be opened by injections of water and glycerine when the patient is not able to take alkaline aperients through the stomach in the ordinary manner. An infusion of digitalis, tablespoonful doses, with ten grains of citrate of potash every four hours, will increase the urinary excretions when they are diminished. Hypodermics of the nitrate or sulphate of strychnine, with a little digitalin, are the best to overcome heart-weakness and often relieve the delirium. Tablets made as follows for hypodermic use will be found very serviceable :—Gold and sodium chloride, 1-24 grain ; strychnine nitrate, 1-60 grain ; nitro-glycerine, 1-300 grain ; atropine sulph., 1-200 grain ; digitalin, 1-60 grain ; sodium chloride, 1-8 grain. Cold to the head overcomes delirium when due to congestion or active hyperæmia of the meninges. (From Abstract in Therapeutic Gazette, April 15, 1896.)

BRAIN TUMOUR.—Recovery from.

The following is taken from Dr. Allen Starr's paper on Brain Tumours :—The following case is one in which syphilis could be absolutely excluded. On April 24, when I first saw the patient, aged 16, he was very ill. He was confined to bed, and any motion increased the intense headache from which he constantly suffered. He was extremely emaciated, and frequent vomiting was attended by great vertigo and prostration. His eyes were prominent, his pupils were dilated, there was a slight deviation of the left eye outward, he saw double, vision was reduced two-thirds, and there was very marked nystagmus on any lateral movement of the eyes. Examination of the ophthalmoscope revealed a double optic neuritis, with great distension of the veins, but without hemorrhage in the retina. There was no paralysis of the face, but he complained of numbness in the left side of the face and some weakness in the muscles of mastication on the left side of the jaw. His tongue deviated to the left. There was no paralysis or ataxia of the hands, and no disturbances of sensation in the extremities or body. There was no paralysis or ataxia of the legs when at rest, and his knee jerks were normal. There was no clonus. On standing up, his head fell forward, but he was able to straighten it with some effort, holding it, however, somewhat forward and toward the left. He staggered painfully in standing and in walking, so that he was unable to walk without assistance. The staggering was of the type recognised as cerebellar. He had had on three occasions retention of urine which had to be relieved by a catheter, and he was extremely constipated. With these general symptoms of brain tumour, and with the local symptoms of cerebellar disease, together with an affection of the fifth, eighth, and twelfth nerves on the left side, it seemed evident that this boy must have a tumour involving the cerebellum and producing compression of the left side of the cerebral axis ; a tumour, in a word, whose position was such as to make any operation absolutely impossible. In the absence of any history of syphilis it seemed proper to give an absolutely unfavourable prognosis, and yet to resort to inunctions and large doses of iodide as affording the only possible hope. These were immediately begun, and the iodide rapidly run up to 250 grains a day. A steady improvement began in about two weeks after the treatment was instituted, and by June 15 he was up and about, without headaches, without vomiting, and walking without assistance quite well. He still staggered slightly, however, with a tendency to go toward the left; his tongue still deviated to the left. The left side of his face was still hyperæsthetic, and at times painful. His eyesight was improved and the optic neuritis was subsiding. The improvement went on during the entire summer, and at present the boy is quite well, with the exception of nystagmus and a slight right facial paralysis which has developed slowly. The appearance of his eyes is such as to suggest the previous existence of a neuritis, though his sight is normal. He is still taking two drachms of the iodide of potassium daily. This case, then, shows that even in some individuals where there is no history of syphilis medical treatment for a brain tumour occasionally succeeds. Whether this treatment may be aided by diminution of the intracranial pressure may be left an open question. (Medical Record, February 1, 1896.)

[See also article "Brain Tumour Successfully Treated by Internal Medication," at p. 198 of this volume of the *Retrospect.*]

CARIES, SPINAL.

Dr. Calot does not, in the present state of our knowledge, consider it justifiable to operate in cases of paralysis due to Pott's disease of the spine, because the majority of cases will recover if treated by prolonged rest. Dr. Calot has, during the last four years, treated 20 cases by rest and immobilisation, and, of these, 19 are either quite cured or on their way to complete cure, 1 only having died in consequence of the rupture of a large psoas abscess into the bladder. The seat and the extent of the lesions in Pott's disease, the nature of the tuberculous process, as well as the risk attending surgical interference, all contra-indicate any operative treatment. Out of the number of recorded cases in which the surgeon has stepped in, 50 per cent. died directly from the operation, while there is reason to believe that the real mortality amounts to between 60 and 80 per cent. Certainly, as far as Dr. Calot can see, better results are to be obtained by a strictly orthopœdic treatment. (Medical Times and Hospital Gazette, March 7, 1896.)

[The above is included here on account of the remarkable percentage of recoveries. The number of deaths stated to be directly due to laminectomy must surely be much too high.—E.F.T.]

DIPHTHERITIC PARALYSIS.

Of the 146 antitoxin cases, 11 were under observation in hospital over seventy days; 38 between forty-five and sixty days; 43 between thirty and forty days; and 54 under twenty-five days; and the number that exhibited unequivocal paralysis during this time was 18 cases, or a proportion of 12·3 per cent. When the 20 cases which died early, before it was possible for paralysis to be declared, are deducted, an incidence of 14·3 per cent. is given. The majority of the cases of paralysis (11) occurred among patients suffering from the milder "faucial" form of diphtheria with whom the neuroses were more marked (3 fatal cases) and varied than with the "laryngeal" cases where paralysis occurred in 7 patients (2 fatal). After dismissal, 46 of the former patients were again examined within four weeks, and paresis of the palate was discovered in 3 of them; 25 were examined within six weeks of dismissal, and 1 showed a paresis of the palate; 25 were examined within eight weeks of dismissal, and 1 had sensory phenomena; 11 were examined within ten weeks of dismissal, and 1 had ciliary and oculo-motor paresis; 6 were examined within sixteen weeks of dismissal, and in 1 the knee-jerk was absent. The proportion of antitoxinised patients, therefore, who exhibited undoubted post-diphtheritic neuroses when corrected according to the additional data obtained above stands at 17 per cent., or deducting cases fatal early in their illness at 19·5 per cent. (From Dr. E. L. Marsh's paper on the "Results obtained under the Serum Treatment in Glasgow Fever Hospital," Glasgow Medical Journal, May, 1896.)

EPILEPSY.—Treatment of.

Lui (*Rev. sper. di Freniatr*, vol. xxi., f. 2 3) has been trying the treatment of epilepsy advocated by Flechsig and Bechterew. Three cases were treated by Flechsig's method, which consists in a preliminary course of opium in gradually increasing doses up to 1·15 grain of the extract daily, followed by bromides, 7·5 to 8 grains daily. During the opium course two of the patients had a slight lessening in the fits, whilst in the third they became much more frequent and intense, so that, instead of having two or three a week, he had five or six. Severe opium intolerance set in in one case, so that the drug had to be discontinued for a week. With the commencement of the bromide the fits ceased at once, and in one case have not reappeared after four months; in the two other cases the fits reappeared after two months, but much reduced, both in frequency and in severity. Bechterew's method — the simultaneous administration of bromide and adonis vernalis and codeine—was tried in 10 cases, and with diminution of the fits, both in intensity and duration in each case. With this method there are none of the inconveniences that are liable to arise from opium intolerance, and, on the whole, the author is inclined to prefer Bechterew's method. He has little faith in the borax treatment of epilepsy. Guiccardi, in the same review, gives an account of more cases of epilepsy treated after Bechterew's plan. The author concludes that the good effects which follow are due to the bromide and not to the adonis or codeine. It appears to be better borne than simple bromide, and does not produce any ill effects moreover from the tonic effects on the vascular system due to the adonis. Bechterew's treatment may have an advantage over the ordinary treatment in cases in which there is cardiac debility. (British Medical Journal Epitome, November 16, 1895.)

EPILEPSY DUE TO DENTAL IRRITATION.

A case of epilepsy, traceable apparently to dental irritation, is recorded (in the *Western Dental Journal*, *J. Brit. Dental Assoc.*, 1896, xvii., 184) by Dr. J. D. Patterson. The patient in question was a child aged eight years, who for a year before being seen frequently suffered with spasms or convulsions, which would come on without warning. At one time these contractions would force the fingers of the hand into unnatural and rigid positions, at times only one finger doubling up, and again all of the fingers clasped tightly, the nails leaving their imprint upon the palm. Similar contractions would appear on the toes of the feet. The usual methods of treatment having failed to give permanent relief, the question of dental irritation was inquired into. There were no canine teeth, but the permanent teeth were in various stages of eruption and at the same time considerably retarded. Noting the points where irritation appeared from coming teeth and delayed shedding of deciduous teeth, the gums were lanced and the deciduous teeth removed where there was suspicion of irritation, with the result that the epileptic seizures ceased. This treatment was repeated whenever attacks supervened, the relief being always complete. Not until all the permanent teeth were completely erupted did the attacks entirely cease. The patient, at first a strong, healthy girl, became anæmic while the earlier treatment was of no avail, but rapidly improved when the relief from dental irritation was instituted. The epileptic spasms had not returned up to when the patient was last seen, namely about three years ago. (Pediatrics, May 15, 1896.)

GRAVES' DISEASE.

The following occurs in Dr. Allen Starr's paper on this subject:—I think it may be said in conclusion that in the severe and intractable cases of exophthalmic goitre in which rest-cure and medicinal treatment have failed to relieve, the operation of extirpation of the thyroid gland must be considered as justifiable, and should be advocated by physicians. It should not be undertaken by surgeons hastily, or without some experience. The surgeons who have been most successful in the past few years are those who have had the largest experience in the extirpation of goitres. The respective merits of the various operations proposed cannot be discussed in this place. Some surgeons prefer an almost complete extirpation of the gland, though it is always to be remembered that a small portion of the gland must be allowed to remain, else the patient will develop symptoms of myxœdema. Some surgeons prefer the operation of tying three or four of the arteries entering the gland, although this operation is almost as difficult as that of extirpation, and is not by any means uniformly successful, the number of new vessels entering the gland being so great as to keep up its size and nutrition even after the main vessels have been tried. Others prefer the operation of Jaboulay of exothyropexie, in which the gland is exposed, drawn forward into an open wound, and then allowed gradually to contract and dry up. This is not always successful, and leaves a very ugly scar in the neck. It is, however, safer than either of the other operations, Jaboulay having reported 14 cases successfully treated by this method without a death. *Conclusions.*—(1) It seems probable that the symptoms of exophthalmic goitre are due to an excess of thyroid juice, either of normal or abnormal character, circulating in the blood and acting directly upon the vasomotor and nervous systems and upon the muscles. (2) It seems probable that the best treatment for the disease is to arrest the secretion of the thyroid gland or to remove the gland from the body. (Medical News, April 18, 1896.)

GRAVES' DISEASE CURED WITH THYROIDINE.

Liley, in connection with the opinions of Herren Senator, Ewald, and Mendel, expressed at the last meeting as to the uselessness of thyroidine treatment in Basedow's disease, brought before the German Medical Society a case that showed the contrary. The patient was first treated in Senator's clinic with arsenic, but without result. The patient got worse from week to week, although she was sent away into the country. On coming home again she showed all the symptoms of the disease, Graefe's sign, exophthalmus, trembling of the hands, &c., and she could only drag herself up the steps with difficulty. A lady made her a present of three boxes of German thyroidine tablets, of which she took six tablets a day. Although attending the polyclinic occasionally, she continued taking the tablets on her own responsibility, and at the present time, after about four months of the treatment, she could be pronounced nearly well. The circumference of the neck was reduced from 35 to 33 ctm., the cardiac murmur had disappeared, and scarcely any trembling remained. It had to be looked for carefully before it could be noticed. The subjective condition was good.

Hr. Senator said his observations had been made with the English tablets.

Hr. Ewald remarked that Hr. Silex's experience did not stand alone. A number of such cases had been described, especially in English literature. The majority of the observations were, however, unfavourable. He himself had seen no good result. In his case, related at the last meeting of the Society, the symptoms returned in an exaggerated form, and the thyroidine was no longer of any use. (Medical Press and Circular, February 19, 1896.)

HYSTERIA OF GASTRO-INTESTINAL ORIGIN.

(*Gazette des Hôpitaux*). M. Debone analysed a second paper by M. Clozier, in which he attributed hysteria to gastro-intestinal troubles, and denies that it may be by itself an hereditary malady. It appears in reality that in certain cases the digestive troubles may be the cause of the development of hysteria. But in other cases the digestive ailments are secondary to the hysteria. Finally, there are cases where hysteria exists without digestive disorders, either primary or secondary, and in which the influence of heredity is certain. (Dr. Freeman's abstract in the Journal of Nervous and Mental Disease, October, 1895.)

HYSTERICAL MONOPLEGIA.

Dr. F. X. Dercum showed this case before the Philadelphia Neurological Society. A man, aged 55, while "setting a heater" September 9, 1895, received a jar to the left shoulder, accompanied with great pain (pain about two inches below clavicle and going nearly through back). Was treated for this two months by bandaging and rest. Did not improve; transferred to nervous wards November 22, 1895. On examination, patient in good physical condition, except the left arm, which hangs at his side in a helpless manner, patient being unable to move it. At times the man had pain in the breast, and at other times there would be pain in the biceps. The arm was anæsthetic; the distribution of the anæsthesia was peculiar. It was the segmental anæsthesia which we often see in hysteria. The wrist and the hand were decidedly œdematous. This was of a bluish colour, and at once suggesting blue œdema (*l'œdema bleu*). I hypnotised the patient and suggested the disappearance of the anæsthesia, and it disappeared promptly. The second or third time, he moved the arm freely in all directions. I have neglected to hypnotise him recently, and he has to a certain extent relapsed as regards the muscular symptoms. The case is of interest on account of the œdema and typical anæsthesia. There were no contractures of the visual field. The colour sense was not tested. The explanation of this case may be that the man in lifting strained a few muscular fibres, and this may have been the initial cause of the auto-suggestion that the arm was paralysed. (Journal of Nervous and Mental Disease, March, 1896.)

LOCOMOTOR ATAXIA.—Mechanical Treatment of.

Belugou (*Archives Gen. de Méd.*, February, 1896) passes in review all the various methods of treating tabes by suspension and other mechanical methods, including nerve stretching. The writer finds that neither those who condemn suspension *in toto* nor those who believe in its efficacy are altogether in the right, and he shows that this method, though by no means curative in any sense, is certainly of benefit in the treatment of some symptoms in a few cases, and that it is rather the symptoms than its method of application that make it in any way successful. Thus the gait, motor inco-ordination, to a certain extent Romberg's sign, and vesical paresis, are often benefited by suspension. The author finds that rapid cases, exacerbations, laryngeal crises, advanced age, anæmia, œdema, obesity, and lesions of the cardio-vascular system are all contra-indications. The most important portion of the paper is his description of compensatory gymnastics, first introduced by Fraenkel. This method consists in the execution of certain defined movements directed towards the special functions affected. These movements are divided into three classes:—No. 1 consists simply of flexion, extension, abduction; No. 2, of simple co-ordinated movements in a definite direction against resistance; No. 3, of combined co-ordinated movements. The first of these consists of the garter, which is applied round one leg at the level of the knee. On this is a small piece of wood, which is fixed to the front of the patella by the garter. The patient then raises the other leg, then flexing it brings it rapidly down so as to touch this piece of wood with the heel. Another movement is obtained by holding a stick just above the middle of the legs. The patient then passes one foot alternately over the stick and back again without touching it. A modification of this is the hoop, through which one foot is passed without touching it. The advantage of this is that it can be held in different positions so as to combine the action of various muscles. For the upper limbs many of the same exercises are employed, but in the third class a special series is used necessitating delicate co-ordination.

One of these consists in suspending balls of different sizes in a frame at different heights; these are put in movement, and the patient is obliged to seize each moving ball. From all these the author has obtained some very satisfactory results. He also suggests making the patient walk between parallel bars to reinstruct him, as it were, to keep his balance. At the same time, he points out that it is useless to expect too much from any mechanical method of treatment, and that cases of slow evolution, very marked sensory derangement, and arthropathic complications are least likely to give any results. (British Medical Journal Epitome, March 28, 1896.)

LUMBAR PUNCTURE.

Rieken (*Deutsches Archiv für Klin. Med.*, *Medicine*, 1896, ii., 130) gives a report of the cases, 35 in all, in which lumbar puncture of the spinal canal has been performed in the clinic of Quincke, at Kiel, since 1891. The conclusions which pertain chiefly to the diagnostic and therapeutic value of the procedure, are in the main as follows:—(1) In lumbar puncture great attention should be paid to the measurement of the pressure of the spinal fluid. Any pressure above 150 mm. is certainly pathological. A moderate increase in pressure with severe pressure symptoms speaks for an acute disease process, while a very marked increase in pressure, with but moderate or slight pressure symptoms, gives evidence of a chronic affection. In other words, the pressure symptoms in brain and cord disease depend not so much on the absolute amount of pressure as upon the rapidity with which the pressure increases. (2) The richness of the cerebro-spinal fluid in albumen is normally less than 0·1 per cent. In acute affections the percentage may be as high as 0·2 or more. (3) The amount of fluid that can be withdrawn depends upon the pressure and the capacity of the ventricles. This fluid is generally clear. It contains more cellular elements in the acute inflammatory processes. (4) In tubercular meningitis bacilli are frequently demonstrable (Lichtheim and Fürbringer). (5) Blood may sometimes be obtained in cases of hemorrhage into the ventricle. (6) Rarely the free communication between the spinal subarachnoidean space and that of the brain, and with the cerebral ventricles, may be shut off by pathological conditions, and thus the diagnostic value of puncture be limited by failure to reveal intra-cranial pressure and the character of the intra-cranial fluid. (7) Therapeutically, lumbar puncture relieves pressure. In none of the cases of tubercular meningitis here reported was there more than temporary relief. In the cases of serous meningitis, however, benefit was seen to follow the operation. "In cases 2 and 5 (acute serous meningitis) the improvement in the symptoms followed so immediately the puncture that there could be no doubt of their connection." The removal of fluid in these cases, even though it may not be a life-saving operation, ameliorates the condition of the patient and permits of a more rapid absorption of the remaining exudate by the veins and lymphatics. Rieken firmly believes that future experience will prove that lumbar puncture is a valuable therapeutic procedure, comparable to pleural and abdominal puncture. (Pediatrics, March 1, 1896, p. 235.)

MANIACAL EXCITEMENT FOLLOWING THE ADMINISTRATION OF SALICYLATE OF SODA.

By Robertson (*Journal of Mental Science*, October, 1895).—A quiet, inoffensive woman, who had been an inmate of the Northumberland Asylum for eighteen months, the subject of delusional insanity, began to suffer from subacute rheumatism. Salicylate of soda in 20-grain doses every four hours was prescribed, but after the administration of six doses she became restless and talkative, and this shortly passed into acute delirious excitement with violent inco-ordinate muscular activity, which subsided in thirty-six hours. The synovitis, which had disappeared, afterwards returned, but subsided under treatment by alkalies without the occurrence of cerebral complications. In this case the artificial salt was used, which would lend support to the view expressed by Charteris and MacLennan, that the toxic properties are to be attributed to the impurities of the phenol employed in the synthetic preparation of the artificial acid. (Glasgow Medical Journal, December, 1895.)

MENINGITIS.—Recovery from.

Janssen (*Deut. med. Woch.*, March 12, 1896) refers to the rarity of recovery in this disease. In a few cases the diagnosis has been established by finding evidence of a past tuberculous meningitis, the patient having died of some other cause. In Freyhan's case of recovery tubercle bacilli were found in the fluid drawn off by spinal puncture. The author then records the following case:—A man, aged 19, was admitted in May, 1892, with headache, stupor, vomiting, and constipation. The temperature was raised, and at one time the pulse only numbered 42 per minute. Later there was ocular paralysis and retraction of the head. Some fourteen days after admission the patient began to improve, and he was discharged well a month afterwards. Three years later he was again admitted into hospital with early phthisis. The disease ran a rapid course and he died four months later. At the necropsy, a yellow mass, composed of minute tubercles, and measuring 4 centimetres long and 2 centimetres wide, was found running along each side of the longitudinal fissure. The pia mater was of a milk-white colour in several places over the convexity of the brain; there minute tubercles were also seen. The first-named tubercles consisted of detritus, fat, and a few cells, but no fibrous tissue; and the last-named of fibrous tissue and a few cells. In no instance were tubercle bacilli found. At the base of the brain the same white spots containing tubercles were seen about the chiasma and Sylvian fissures. In these white areas the pia mater and arachnoid were adherent to the underlying brain tissue. As regards the treatment of this attack of tuberculous meningitis, the head was shaved, and iodide of potassium was given in large doses; 8 grains were at first administered in the day, but this quantity was rapidly increased. The patient took as much as 950 grains during the illness. There was a slight coryza, but no other unpleasant symptom. All the secretions and excretions gave a marked iodine reaction. The author thinks that the iodide had undoubtedly a favourable effect on the disease. This treatment is not new, but these large doses of iodide have not within the author's knowledge been used before. (British Medical Journal Epitome, May 16, 1896.)

METATARSALGIA.

From Dr. O. T. Osborne's paper. This is a condition which, I believe, in its less severe forms is of frequent occurrence, and is overlooked or passed lightly over. It is a neuralgia of one of the metatarso-phalangeal nerves, viz., that going to the fourth toe on the outer side. It is a traumatic neuralgia, *i.e.*, a nerve-pain due to constant or intermittent injury. The cause of this nerve-injury, as pointed out by Morton, is the anatomical formation of the foot plus an injury. Prolonged use of tight shoes can so roll the heads of the fifth metatarsal and phalangeal bones around the head and neck of the fourth metatarsal bone as to cause pressure on the nerves, and pain results. Also any injury to the foot, as twisting it, especially if the foot was encased in a tight-fitting shoe, as noted by Morton, would tend to drive these bones together and injure the nerve. The relaxation of the ligaments thus caused renders ever after the pressure of the shoe a constant source of renewed traumatism. This metatarsalgia occurs in paroxysms, and in mild cases is probably absent for considerable intervals. A great amount of walking, or of going up and down stairs, certainly tends to cause a recurrence. Morton says the "imperative necessity of removing the shoe, regardless of surroundings, when a paroxysm occurs is a pathognomonic symptom. As to treatment, the neuralgia in severe or long-continued cases can, I believe, never be cured by any treatment other than surgical. Faradic electricity is one of the few sedatives of any benefit. Rest in bed will generally stop the pain. Broad-soled, soft, flexible shoes will give some relief, and, if at first preceded by absolute rest, may cure mild acute cases. If neuritis occurs, it can by proper care be cured, but will probably recur unless the cause of the injury is removed. The only, but absolutely successful, treatment of severe cases is by the removal of the fourth toe, or better, by an exsection of the metatarso-phalangeal joint of the fourth toe. (Yale Medical Journal, November, 1895.)

MUSCULAR DYSTROPHY.—Progressive Improvement by Treatment.

Dr. A. Wiener presented a case in a man about 24 years old. The first indication of difficulty was in May, 1892, when he began to suffer from vague pains in the region of the spleen and liver on considerable muscular exertion. Shortly after this, difficulty in going upstairs and in walking was observed, and soon atrophy of the lower extremities and back was observed. Finally, the muscles of the neck and face became involved. The patient denied alcoholism or syphilis, and stated that his health had been excellent. He had noticed while engaged in athletic sports that the muscles of the upper extremities quickly became fatigued. In 1893 there was no distinct abnormality about the formation of the skull. His general appearance was that of a person very much emaciated, and there was great difficulty in walking and lifting the limbs. On attempting to stand upright he exhibited a marked lordosis. When lying down it was impossible for him to turn over. The muscles were soft and covered with redundant skin. No vasomotor or trophic disturbances were discovered. The deep reflexes were absent on both sides. The spinal column was in no way tender on percussion. Examination of the muscles showed a marked paresis. The muscles of the forearm and hand appeared normal. Mechanical excitability was very much diminished. Electrical examination gave quantitative changes, but no reaction of degeneration. The abdominal muscles were only slightly affected. The orbicularis oris and palpebrarum were the ones chiefly affected about the face. A microscopic examination of a piece of deltoid muscle showed simple atrophy of the muscular fibres, with cell infiltration in the muscle and between the fibres. No hypertrophy of the fibres could be found, and there was no evidence of fatty deposit. The small blood-vessels were filled with blood, and the walls with round cells. The lack of all sensory disturbances left no doubt that this was a case of the myopathic type. No improvement was noticed under the usual tonics and electrical treatment, so it was decided to try the effect of physical exercise carried on daily to the point of moderate fatigue. From half an hour to one hour were devoted to exercises with dumb-bells, Indian clubs, and the use of a health-lift machine. There was evidence of very marked improvement in every way. Quite lately he had been able to ride many miles a day on a bicycle. Some of the muscles still showed atrophy. The improvement was especially marked in the muscular movements and in the partial return of the contour of the diseased parts. It was not thought that such treatment would be efficacious in cases developing in infancy, but where there had been a good development prior to the appearance of the disease, this plan of treatment offered a good prospect of success. (The Journal of Nervous and Mental Disease, February, 1896.)

NEURASTHENIA, TRAUMATIC.

Dr. C. E. Nammack presented to the New York Neurological Society a patient, a policeman, who, on October 12, 1892, had attempted to stop three runaway horses attached to a steam fire engine, in the Centennial parade. He was successful in this, but although not physically injured, he received a profound psychic shock. One week later it became necessary for him to seek medical advice, for the relief of pains in his chest. On the advice of Dr. C. L. Dana, he went abroad, and remained there from June, 1894, to October, 1895. He had been perfectly well up to the time of this accident, and his family and personal history were excellent. He remained on police duty for some time, but found himself unable to attend to his work, even though his promotion to the rank of roundsman had rendered this less monotonous than formerly. The first symptoms noticed were diminished power of persistent application and nervous irritability. Mental exaltation then became marked, and insomnia became most distressing. Hyperæsthesia and paræsthesia were noticed. The principal subjective symptoms were pain over the heart and dyspnœa, on exertion; profuse sweating and insomnia. Examination recently showed the pain and temperature senses normal, tactile sensibility impaired, and hyperæsthesia wanting. Both visual fields showed the shifting type of contraction. Colour perception was fairly good. There was no motor weakness of the eyes, and no abnormal pupillary reaction. Smell and taste were not affected; station and gait were good; there was some tremour of the hand. The knee jerks were slightly exaggerated. The heart action was weak and greatly accelerated by walking; there was no enlargement of the heart or valvular disease. Slight irritation of the skin led to persistent redness. His weight had fallen from 220 to 175 pounds. Micturition was not vigorously performed. The urine was normal. The sexual desire was weak, although the power was good. The diagnosis in this case, the speaker said, lay between traumatic neurasthenia, traumatic hysteria and simulation. The last was excluded by the absence of motive, of striking symptoms and of effort exaggerate slight symptoms. Hysteria was excluded by the absence of anæsthesia, contractures, spasms, &c., and of paroxysmal phenomena. The patient had had the benefit of skilful treatment, and improvement had been slow but steady. Apparently, hydrotherapy had benefited the patient the most. The case was interesting, as being free from the usual complications arising from prospective lawsuits.

Dr. C. L. Dana said that when he saw this case he made the diagnosis of traumatic neurasthenia. The case was an interesting and typical one, and was chiefly of importance on account of the absence of the complications referred to. (Journal of Nervous and Mental Disease, January, 1896.)

NEURITIS, MULTIPLE, DUE TO A LONG BICYCLE RIDE.

By Frederick T. Simpson, M.D. H., aged 26 years, rode fifty miles on a bicycle, August 31. He usually rode short distances, and this was his first long ride. According to his account, the road was rough and hilly, and he got very hot and sweaty going up hills and felt icy cold coasting down hills. Beyond the natural fatigue of such a journey, no special effects were noticed for a week. Then he began to have queer sensations in the face, which passed off, however, in a day or two and did not return. He next noticed (twelfth day) a slight numbness in the hands. This was increased the following day, involving also the feet. The third day the condition was worse, the peculiar "electrical" sensations being felt on his chest also. He now consulted his physician, who found existing a moderate degree of anæsthesia and ataxia besides the paræsthesiæ. I saw him some three days after this and noted the following condition:—Subjective feelings of numbness in the forearms and hands, legs and feet. Grasping these parts caused disagreeable "electrical" shocks. Partial analgesia, tactile anæsthesia, and thermoanæsthesia in these parts, most marked in the upper extremities. Patellar reflex not much affected, but, if anything, somewhat lessened. Moderate degree of ataxia of both upper and lower limbs. Movements at shoulder and elbow joints good, but of hands and fingers considerably affected. Grip:—Right, 35; left, 35; normal, 55 to 60. No pain or tenderness in the back nor muscular stiffness anywhere. No head symptoms; bowels and bladder undisturbed. Pulse, 84;

temperature, 98·5°. Four days later I saw him again. Symptoms more marked, especially in the upper limbs. Grip 25 on each side. Loss of sense of position marked and complained of by the patient. Faradaic response feeble but not lost. He lived in an adjoining town and I did not see him again, but I learn that his condition was the same some two weeks later, when his father came and removed him home to another part of the State. The diagnosis of multiple neuritis in this case seems to be very clear. The interest centres in the relation of the bicycle ride to the condition. The usual causes of multiple neuritis could be entirely excluded. Nothing could be elicited in the condition, habits, or experiences of the patient which could account for this nervous disorder other than the bicycle ride, and, in the mind of the writer, its ætiological relation in the matter is perfectly clear. (New York Medical Journal, December 14, 1895.)

NEURITIS, MULTIPLE, IN INFANTS.

Dr. Græme M. Hammond read a paper before the New York Neurological Society in which he reported a series of cases of multiple neuritis in infants in the city of Bridgeport, Conn. There were ten cases in all, ranging from four-and-a-half months to four-and-a-half years in age. In all but two cases there were distinct premonitory symptoms of headaches, vomiting, and fever. Following this there was a gradual and progressive paralysis, usually beginning in the feet and extending to the upper extremities, and, in some instances, involving the muscles of the trunk, and in two cases the muscles of deglutition. Accompanying the paralysis there was pain, both spontaneous and on passive motion, and the nerve trunks were very sensitive to pressure. The area of pain and tenderness accompanied the extension of the paralysis. The reflexes were abolished and the electrical reactions of degeneration were well marked. Two of the cases exhibited symptoms of spinal meningitis in addition to the neuritis. One case, the youngest, four-and-a-half months old, died after an illness lasting one month. The muscles of deglutition became paralysed and the child died from exhaustion. In the other cases recovery began in from four to six weeks, but was not completed until from three to four months. No similar cases were discovered in neighbouring towns. After referring to the epidemics of anterior poliomyelitis which have in the past been reported, both in Europe and in America, the reader concluded by accepting the theory of their microbic origin, and expressed his belief that these cases of neuritis were due to a similar cause. (Journal of Nervous and Mental Disease, December, 1895.)

NEURITIS OF BRACHIAL PLEXUS AFTER PNEUMONIA.

Dr. W. M. Leszynsky presented before the New York Neurological Society a man, 36 years of age, who five months ago had suffered from an attack of neuritis involving the brachial plexus upon both sides. This condition had developed during convalescence from acute pneumonia. There was no history of traumatism or exposure to cold, nor was there any evidence of alcoholism, syphilis, or rheumatism. He looked upon the pneumonic infection as the direct cause of the neuritis. The speaker said that at present there was a pronounced and typical paralysis of the left serratus magnus, and also some atrophy of the deltoid and supraspinatus. Upon the right side there was well-marked atrophy of the deltoid, with absolute anæsthesia in the cutaneous distribution of the circumflex nerve, and complete loss of faradaic irritability. There was also atrophy of the supraspinatus. (Journal of Nervous and Mental Disease, December, 1895.)

NEUROSES, TRAUMATIC.

The essence of the treatment, as Strümpell points out, is so far as possible to prevent the establishment of the hypochondriacal ideas which later are much more difficult if not incapable of removal. Treatment from the very first should be a psychical one, and should be persisted in as long as or longer than the false ideas prevail. The anticipation of a trial with the hope of reward for supposed or real injuries received, must inevitably be a serious hindrance to the therapeutic measures undertaken. During the time of suspense it is more than likely that an attitude of mind may be established which no effort, however painstaking, can later alter. Hence the perfectly well-established fact that the bestowal of damages does not usually cure the disease, as the radical simulationists would have us believe. Strümpell's conclusions in the articles to which allusion has already been made are so moderate and fair that we give them in substance here:—(1) The name "traumatic neurosis" in its common acceptation should no longer be used as the expression for a definite and special disease. (2) It is probable that a true "traumatic neurosis" exists in the sense of a chronic organic change resulting from a severe commotio cerebri or commotio spinalis. Such cases are, however, rare. (3) The so-called objective symptoms of accident neuroses do not properly deserve the name; all such symptoms are dependent upon the psychical state of the patient. (4) The distinction between simulation, purposive exaggeration, and a true neurosis is easy theoretically; practically the difficulties in diagnosis are often great. The changing character of certain symptoms does not necessarily imply simulation. (5) It is of the utmost practical importance, whenever possible, to prevent the onset of the neurosis; balliation has a much more brilliant outcome than treatment when the condition is established. (6) In all cases it is the duty of the physician to bring it about that the patient shall again gradually accustom himself to work. (From an Abstract in the Medical Record of an editorial in the Boston Medical and Surgical Journal, March 19, 1896.)

PACHYMENINGITIS, CERVICAL.

Dr. Leech showed before the Manchester Medical Society a patient who first came under his care nineteen years ago, being then 15. He was suffering from loss of power over both arms and the left leg. Prior to the paralysis he had had an abscess at the back of his neck, and through a sinus which resulted a piece of bone of considerable size had been discharged. Soon after admission to the infirmary power was entirely lost in the arms and legs, the muscles were rigid, the deep reflexes much exaggerated, and tremors were easily produced. The muscles of the upper extremity were wasted, and there was characteristic deformity of the hands. He had incontinence of urine and some anæsthesia. The body remained completely paralysed for many months, yet eventually he recovered. He could not stand for two years, and three years elapsed before he could walk. For sixteen years he has remained well and able to work. The right hand is a little deformed, and the reflexes are unduly marked, otherwise he is in good health. (British Medical Journal, November 23, 1895.)

PAIN.—Treatment of.

In the *Berliner Klinische Wochenschrift*, 1896, Nos. 4, 5, and 6, Dr. Goldscheider has published an interesting series of articles on "The Treatment of Pain." He commences by stating that, in spite of the very different diseases in which pain is a prominent symptom, and the different intensity of suffering in those diseases and the idiosyncrasies of patients, yet some attempt may be made to classify the methods adopted for dealing with this symptom. He then proceeds to divide "pain" into several classes according to its direct cause. In the first there is actual pain or suffering produced by excitation of the sensory nerves. In a second class the pain is much less distressing, lasts longer, and produces a general sense of discomfort, and is well expressed by the German word "Weh!" To this class belong slight headaches, the discomfort of dyspepsia, &c. A third class of "pain" depends upon an increased cerebral irritability, the so-called "mental pain." In a large number of cases the treatment of the pain is the same means as is adopted for the treatment of the disease, but in such cases certain principles are involved, a knowledge of the cause of the pain, and the possibility of dealing with it therapeutically. With regard to the latter point two divisions may be made, in the first of which the pain is dependent on a true affection of the nervous system, and in the second of which the pain is secondary, dependent on pathological changes in other tissues, such as in inflammations, new growths, &c. Whilst in the second group the treatment of the pain is secondary to that of the causal condition, in the first the treatment is directly applied for the relief of the pain, and in many cases this is all-sufficient for the disease. The remedies employed for the relief of the pain may be classified thus:—(1) The irritability of the affected part of the nervous system is treated by depressing anodynes, narcotics, cold, or electricity. Amongst these morphia holds a prominent position. Belladonna, hyoscyamus, &c., are also useful, and in some conditions of the nervous system bromides, especially when the pain partakes of the characters of the second division described above. In similar conditions the "anti-neuralgics" are often successful. (2) Remedies which act by counter-irritation—blisters, sinapisms, liniments, and plasters, and the use of the faradaic brush. Dr. Goldscheider adds that these remedies act, not by the hyperæmia which they produce, but by the sensory effects which directly follow, and he enters very fully into the theory of such action. (3) Means which bring about changes in the circulation—local blood-letting, cold, heat, and hydrotherapy. (4) Massage and graduated exercises. Under the latter head he includes movements which are employed in neuralgia of the legs and arms, and for painful joints. (5) Means which are employed to act directly on the central nervous system—hypnotism and suggestion. (The Lancet, March 7, 1896.)

SCIATICA, NITRO-GLYCERINE IN.

Dr. Mikhalkine, of Nijni-Novogorod (*Journal de Med. de Paris*, April 21, 1895) has had occasion to test the anti-neuralgic properties of trinitrin (nitro-glycerine) in three cases of inveterate sciatica which showed themselves absolutely rebellious to such remedies as antipyrine, phenacetine, acetanilide, chloral hydrate, the bromides, and other analogous preparations. Under the influence of nitro-glycerine two cases were radically cured of their sciatica, and in the third case marked improvement took place. The trinitrin was administered either in the form of a 1 per cent. solution in alcohol, of which the patients took three drops daily, or in the following mixture:—℞ 1% alcoholic sol. trinitrin, 5·0; tr. capsici, 7·5; aq. menth., 15·0. Dose, 5 to 10 drops, three times daily. (Dr. Meirowitz's abstract in the Journal of Nervous and Mental Disease, November, 1895.)

SCIATICA, TREATMENT BY COMPRESSION.

In an abstract of an article from the *Bulletin Medical de Paris* for January 22, 1896, which is published in the *Lyon Medical* for February 2, the writer states that M. Negro has reported 113 cases of rebellious sciatica in which this new treatment had resulted in recovery. The procedure is as follows:—The patient lies on his face with his legs extended and resting easily one against the other. The most painful spot is selected, the region where the nerve proceeds from the large sciatic opening. On its trunk both thumbs are applied and it is compressed with the greatest possible force; at the same time, slight lateral movements are made without changing the point of pressure or moderating its intensity. This takes from fifteen to twenty seconds, and is followed by an interval of twenty minutes' rest, when the procedure is repeated. After a second application, which is much less painful than the first, the patient is able to walk, and for several hours, or even a day, he may be free from pain. In order to obtain complete recovery, says the author, this procedure should be practised about six times a day every two days until the definitive suppression of the neuralgia is obtained. (New York Medical Journal, February 29, 1896.)

SPINAL PUNCTURE IN GENERAL PARALYSIS.

Dr. John Turner, in his paper, makes the following remarks:—Now, although from a therapeutic point of view, vertebral puncture must be regarded as a failure, yet the facts obtained by noting the pressure in each case as well as from the subsequent examination of the fluid are full of interest. They are directly opposed, on the one hand, to the idea that the excess of fluid in general paralysis is pressure fluid, and, on the other, to the idea that this fluid is an inflammatory product. They show that in the cases examined, with perhaps two exceptions, there was no pressure present beyond that likely to belong to the blood pressure, and that the nature of the fluid, as regard at least its proteid constituents, did not differ from normal cerebro-spinal fluid, and that it had none of the characters of an inflammatory exudation. (British Medical Journal, May 2, 1896.)

SYPHILIS OF NERVOUS SYSTEM.—Diagnosis.

Dr. W. B. Pritchard, of New York (*Gaillard's Medical Journal*), says:—"To summarise, briefly, these various diagnostic symptoms in syphilis of the nervous system—we have headaches, characterised by nocturnal exacerbation, associated with insomnia, present during the first half of the night; vertigo with the headaches, sometimes amounting to transient unconsciousness; tremours, paresthesiæ, and weakness, often affecting a limb which is afterwards paralysed; a general condition of profound subjective physical weakness and mental sluggishness, with final paralysis of one or several muscles, erratic in distribution, usually of gradual onset, varying in degree from day to day and occurring at night—the headaches and insomnia disappearing, as a rule, immediately upon the onset of paralysis. This combination of symptoms occurring in a middle aged adult is as nearly positive evidence of syphilis as a cause as is any axiom in medicine. Should there be in addition an admitted history of infection or concomitant lesions in the skin, bones, or viscera, the diagnosis is positive. The therapeutic test is of value—great value—but it is not absolute. I have seen cases of non-specific tumour and of tubercular meningitis very greatly improved temporarily while taking mercury or iodide of potassium. It is scarcely necessary to emphasise the necessity for exclusion in making a diagnosis of syphilitic disease of the nervous system. The factors of age and sex are of importance, especially in exclusion, since the disease is more common in men, and the age of 25 to 40 represents the period of life in which syphilis of the nervous system most often manifests itself. The diagnostic data enumerated are applicable to all forms of central specific disease of the nervous system, both cerebral and spinal, though less constant in the spinal cases. Syphilitic disease of the peripheral nerves alone is rarely observed. The explanation, to my mind, of the fact that these symptoms are common to both cerebral and spinal syphilis lies in the belief that we do not meet with disease of either brain or cord alone, but that in all cases both are involved, though in varying degree, of course. Producing disease of the nervous system, as it does, through the medium of the blood vessels, syphilis is never limited to a circumscribed area, and this is true even when a post-mortem reveals by gross examination only a single gumma. I have seen headache and insomnia with vertigo precede for several weeks a paraplegia due to specific meningo-myelitis, not associated with any local cerebral symptoms whatever. I have found these same symptoms present in the early histories of four cases of locomotor ataxia, and I do not believe that syphilis produces symptoms of organic disease of either brain or cord alone, but that in all cases both are more or less involved, usually through the blood vessels supplying the meninges primarily." (Charlotte Medical Journal, February, 1896.)

SYPHILITIC SPINAL DISEASE.

The following is taken from the abstract in the *Medical Record*, April 25th, 1896, of Dr. Sottas' paper :—Dr. Sottas (*International Medical Magazine*) has formulated the following conclusions:—(1) Syphilis can act on the nervous system in two ways—First, directly; in attacking the parenchyma, it determines thus at the onset of the affection the first vague nervous troubles of the secondary period, and later, perhaps, certain systemic affections as tabes. Second, indirectly, in producing an inflammation of the vascular, lymphatic, and connective-tissue elements. The alteration of the parenchyma is secondary to these lesions. (2) Syphilis of the cord appears at a period near that of infection, with a maximum between the end of the first year and the end of the sixth, and is much more frequent in men. (3) The inflammation begins with the vascular walls and perivascular regions and involves especially the small vessels of the periphery of the cord. These inflammatory lesions are characterised by a tendency to nodular formations (miliary gummata of the meninges, of the vessels, of the cord). (4) The alterations of the nervous parenchyma, of the essential elements, and of the neuroglia are secondary. (5) According to the intensity, the distribution, and the rapidity of evolution of the primary lesions, the anæmic necrosis of the nervous tissue appears abruptly as a transverse softening, which may be located at different points of the cord or predominate in one or the other vascular department; or else it appears slowly, and then the destruction is accompanied by a process of substitutive reaction of the neuroglia, which displaces the destroyed elements. (6) Although the necrobiotic lesions followed by sclerosis constitute the principal alteration, there are certain medullary and especially radicular changes, which result from the invasion of the nervous tissue by an infiltration extending from a point in the meninges or from a perivascular sheath. (7) While the lesions preserve the same characters, they may vary in their distribution. They are generally diffuse, but they sometimes assume the aspect of a transverse lesion, more or less intense, more or less limited, and located at different heights of the cord. The lesions involve especially the territory of the postero-lateral spinal vascular system. (8) The ordinary clinical evolution is the following:—At the period of formation of the primary vascular lesions and of those of the meninges, there are diffuse premonitory phenomena. At the period of softening and of degeneration of the nervous elements there is an attack of paraplegia, followed by paralytic phenomena and grave trophic troubles. At the period of sclerosis there is the chronic spastic paraplegia. (9) Death may occur either in the first period of the affection from the localisation or extent of the lesions, or more slowly from the progress of the affection or from a complication. The ordinary termination of the affection is a spastic paraplegia persisting in a chronic state after an amelioration more or less marked. The complete recovery is possible only in certain conditions, when the primary vascular and meningitic lesions have been arrested before the final destruction of the nervous parenchyma. (10) In certain conditions the primary inflammation is accentuated in the meninges, producing a meningitis or a pachymeningitis, or else it assumes the form of a circumscribed gummatous neoplasm. (11) The iodo-mercurial treatment is demanded at the appearance of the first symptoms. It acts only on the primary inflammatory productions and is without influence on the necrobiotic lesions once established. (12) The medullary syphilis is always a serious affection. Death may intervene in spite of treatment, especially in the acute forms.

AFFECTIONS OF THE CIRCULATORY SYSTEM.

ANEURISM OF AORTA.—Early Symptoms.

Of the early symptoms—often, too, first in importance as well as in date—is pain. It is a good practical rule, I think, that whenever you encounter in your experience a case of obstinate or frequently recurring pain, such as might, constructively, be due to pressure upon nerves or upon solid parts, and such as is not fairly in accordance with some disease, known to exist, in the organs of the thorax or abdomen, the suspicion, at least, of an aneurism ought in all cases to arise. The pains of aneurism are often, like all its other symptoms, remarkably paroxysmal; and this is probably, when the pressure is chiefly on nerves; on the other hand they are sometimes more or less constant, and this is usually stated to be when the pressure is connected with erosion of the bones. In my opinion, however, neither of these positions can be assumed as absolutely correct; and it is better simply to recognise the fact that both types of pain exist, and may ever coexist, a certain amount of pain being felt constantly, while it is apt to be much aggravated, in paroxysms. Further, this is the symptom of all others in which the palliative, or possibly curative, effect of iodide of potassium (the most valuable of all single remedies in aneurism) is most easily apparent; the relief coinciding, as it usually does, with a marked and often extraordinary tolerance of the remedy, as regards its physiological effects. (From Dr. W. T. Gairdner, International Clinics, vol. iv, third series.)

CARDIAC DISEASE IN CHILDREN.—Treatment of.

The following rules are given by Perrier (*Mal. des Enfants, College and Clin. Rec.*, 1896, xvii, 11) as to the management of this condition. In the first place, the child should be protected from cold, both because it depresses vitality and also because cold may cause internal congestions. Much fatigue is to be avoided and violent exercise forbidden. In the case of girls, particular attention is to be paid to these points at the approach of puberty. Secondly, the greatest care should be exercised as to diet, which should be simple and consist largely of milk, eggs, easily digested soups, and tender, plainly cooked meats. Milk should be the drink for each meal. Thirdly, a life in the open air is very essential, and the climate should be changed by resorting to warm places in winter and cool ones in summer, for all persons with cardiac disease, particularly children, suffer from rapid changes in temperature. Cold sponging, followed by dry-rubbing, is also of value. In the way of tonic treatment one of the following prescriptions may be used alternately every five days :—Fowler's solution, 4 drachms—Sig., one drop *t. i. d.*; and tincture of gentian, 1 ounce—Sig., one teaspoonful *t. i. d.* Often, too, a small glassful of malt extract is of service after meals. Should there be much cardiac excitability the following may be used in the dose of a teaspoonful twice a day :—Bromide of calcium, 2½ drachms; syrup of bitter orange, 4 ounces. Should there be a tendency to constipation, a little magnesia may be given once or twice a weak. Where there is a well-marked failure of compensation and the muscle is feeble, an absolute milk diet with rest in bed is advisable, the food being given at frequent intervals in small doses and diluted, if the urine is scanty, with lactose in water or by some alkaline water, such as Sels. Every two hours between the doses of food the following may be used with advantage :—℞ tincture of digitalis, 5 to 10 drops ; tincture of cinchona, 7 drachms ; syrup of orange, 3 ounces. A teaspoonful about half an hour after eating. Every morning, to avoid straining, an enema may be given to move the bowels and to favour diuresis. Once in every two weeks a small blister may be placed over the heart with advantage. Where the failure of compensation has lasted for some time the following may be ordered :—Caffeine, 4 to 7 grains; benzoate of sodium, 15 to 30 grains; syrup, 5 drachms; peppermint water, 3 ounces—Sig., dessert spoonful *t. i. d.* for a child of from 7 to 12 years. Should there be cyanosis it may be wise to use :—Ext. convallaria majalis, 8 grains ; syrup, 1 ounce ; infusion of cinchona, 3 ounces. A warm rectal injection should be ordered night and morning, and every eight or ten days a small blister applied to the precordium. If there is a tendency to dropsy, hot-air baths may be used with caution, and if sudden cardiac oppression comes on hypodermic injections of ether are to be employed. (Pediatrics, April 1, 1896.)

CYCLING AND HEART DISEASE.

Dr. B. W. Richardson (*Asclepiad*, 1894-5) arrives at the following conclusions :—(1) Cycling, when carried on with moderation, may in so far as the healthy heart is concerned, be permitted, or even recommended, by practitioners of the healing art. (2) In every case of heart disease it is not necessary to exclude cycling. It may even be useful in certain instances where the action of the heart is feeble, and where signs of fatty degeneration are found, since increased muscular exercise often improves the condition of the muscle, and of no muscle more than the heart itself. (3) As the action of cycling tells directly upon the motion of the heart, the effect it produces on that organ is phenomenally and unexpectedly great in regard to the work it gets out of it. (4) The ultimate effect of severe cycling is to increase the size of the heart, and to render it irritable and hypersensitive to motion, the cycling acting upon it like a stimulant. (5) The over-development of the heart under the continual over-action and extreme over-action, affects, in turn, the arterial resilience, modifies the natural blood-pressure, and favours degenerative structural changes in the organs of the body generally. (6) In persons of timid and nervous natures, "neurotics," the fear incidental to cycling, especially in crowded thoroughfares, is often creative of disturbance and palpitation of the heart, and ought to be taken into account in preventive advice. (7) In advising patients on the subject of cycling, it is often more important to consider the peripheral condition of the circulation than the central. Enfeebled or worn-out arteries, that is to say, are more dangerous than the feeble heart, and, when connected with a heart that is over-active, are seats of danger. This same remark would, of course, apply to cases where there is local arterial injury, as in aneurism. (8) Venous enlargements seem rather to be benefited than injured by cycling, and conditions marked by sluggish circulation through veins are often greatly relieved by the exercise. (9) There are three sets of acts which are most injurious in cycling :—(*a*) Straining to climb hills and to meet head-winds. (*b*) Excessive fatigue. (*c*) The process of exciting the heart and wearing it out sooner by alcoholic stimulants, to the omission of light, frequently repeated, and judiciously selected foods. (10) The time has arrived when practitioners of medicine everywhere should make observations for themselves that confirm or confute these observations. (Medical Chronicle November, 1895.)

GONORRHŒAL ENDOCARDITIS.

The following conclusions are drawn from a study of the question by Finger, Ghon, and Schlagenhaufer (*Arch. f. Derm.*

u. Syph., 1895, p. 323):—(1) There exists a form of malignant endocarditis coming on as a complication of acute gonorrhœa and produced by the gonococcus. (2) The demonstration of the presence of the gonococcus in the vegetations of the endocardium by the process of culture fails, for the reason that the high fever which exists in these cases attacks the vitality of the specific micro-organisms. (3) The diagnosis can be made only by the microscopical examination of sections in which cocci present themselves in such a way as to remove all confusion. (4) The metastatic complications of gonorrhœa are produced through the vascular system. (Medical Record, March 28, 1896.)

HEART DISEASE, ETIOLOGY OF, IN EARLY CHILDHOOD.

Among 30,000 children treated in private and dispensary practice, Professor Pott, of Halle (*Fortschritte der Med.*, Nos. 22 and 23, 1895), had an opportunity of studying 95 cases of cardiac defects. He has never met with a case which could be regarded as due to idiopathic or primary endocarditis, scarlet fever and articular rheumatism being the chief morbific factors. In drawing attention to masked varieties of acute rheumatism, he describes one characterised by high fever, moderate inflammation of the naso-pharyngeal mucous membrane, swelling of the cervical glands and spleen, and, finally, the eruption of herpes labialis and rheumatoid pains in the limbs, which is generally spoken of as ephemeral, glandular or herpetic fever, and which yields rapidly to the salicylates. It is to the overlooking of such cases in children—in whom, as is well known, joint affections during acute rheumatism are frequently very trivial—that much of the chronic cardiac disablement of after-life is due; and the frequency with which such patients deny all knowledge of ever having had rheumatic fever is probably also due in many cases to the same cause. His experience of fœtal endocarditis agrees with the generally recognised opinion that the right heart is most affected *in utero.* He, however, relates a case in which the aortic valves alone were affected, but states that he has not met with a single instance of mitral insufficiency or stenosis in the fœtus. Leaving endocarditic cases, he considers malformations and arrests of development in the fœtal heart, and emphasises Rokitansky's dictum—that such defects are chiefly referable to defective development of the cardiac partitions or septa. The diagnosis of these lesions is admittedly a matter of great difficulty, and, I believe, is chiefly possible by indirect inferences from the duration of life, the degree of cyanosis, and so forth. The sphygmograph and finger also yield valuable information in these cases. A good tracing which implies a pulse of some force denotes a comparatively normal reception and projection of blood by the active ventricle or ventricles, and this will usually be found associated with a minor degree of cyanosis, if any exists, with a considerable age of patient in some cases, and a more favourable prognosis in all. (From Dr. Morrison's abstract in The Practitioner, May, 1896.)

MASTURBATION AND HEART DISEASE.

In the *Deutsche. Archiv. für Klin. Med.*, Bachus has called attention to an affection of the heart which he has frequently found among masturbators. The chief characteristics of this affection is cardiac pain, anxiety, and frequent troublesome palpitations. The disturbance of the heart's action is various, it is more often frequent than slow, usually forcible, and often irregular and unequal. In auscultation, the sounds may be pure, or the first sound at the apex may be impure, or the aortic or pulmonary second sound accentuated. The pulse varies with the cardiac condition, the tension and size are not usually altered materially. The cause of all this trouble is not, says Bachus, easy to determine. At first sight, it seems reasonable to put it down to increase of work on the part of the heart, especially when we consider that it has been claimed that blood-pressure is increased during coitus; although, however, the periodic increase of work causes no hypertrophy. The treatment of the affection includes cessation of the vicious habits in which it originates, as well as the abuse of tobacco, &c., combined with administration of tonics. (Medical Times and Gazette, January 11, 1896.)

MURMURS, INORGANIC CARDIAC, in CHILDREN.

The *Presse Médicale* for December 25 contains an abstract of an article which was published in the *Revue des Maladies de l'Enfance.* The author shows that, in children as well as in adults, a cardio-pulmonary murmur may exist which is independent of all organic lesions. This murmur does not appear until toward the age of three years and a half, and its frequency then increases progressively up to the twentieth year. The author has demonstrated this fact by his researches, which include almost four hundred observations. The diagnosis of cardio-pulmonary murmur presents considerable importance, he says, as it does away with the fears which the symptoms of organic lesions of the heart always give rise to. The rules laid down by Professor Potain to establish this diagnosis in adults are, says the author, applicable to children. The appearance of the murmur seems to be favoured by some diseases, such as chorea, scarlatina, and rheumatism, while other affections, such as pneumonia, diphtheria, and whooping-cough, seem to have no influence whatever. (New York Medical Journal, January 18, 1896.)

PERICARDIAL EFFUSIONS.

The following is taken from an editorial in the *Journal of the American Medical Association*, April 11, 1896:—Pathologists are well aware of how often pericarditis with effusion is not recognised clinically. An early and radical operation ought to increase the percentage of recoveries. A necessary prerequisite for operative treatment is a reliable diagnosis. Ewart (*British Medical Journal*, March 21, 1896), the well-known writer on physical diagnosis, summarises in a timely article numerous practical points to aid one in the diagnosis of pericardial effusion, especially when this is large enough to raise the question as to surgical interference. He discusses under separate headings the following signs, some of which are new:—(1) Considerable extension of the lateral boundaries of the total area of dulness. (2) Great extension of absolute dulness; the sternum absolutely dull. This sign is not absolutely diagnostic, because it may be due to a number of conditions that will separate the two upper lobes of the lungs, such as a much enlarged heart, aneurism, mediastinal tumours, &c. (3) The depression of the liver. In no other condition except in pneumothorax and in thoracic sarcoma is the hepatic depression so marked, at least in the middle line, as in large effusions into the pericardium. (4) Dulness in the right fifth intercartilaginous space (Rotch's sign). Ewart regards this sign as possibly present in certain cases of enormous dilatation of the right auricle from tricuspid stenosis, and hence not sufficient to supply the diagnostic verdict. (5) The diagnosis between pericardial effusion and cardiac dilatation. The lower angle of the pericardial dulness projects to the right. Normally the right auricular border is convex, it retires downward and inward toward the xiphoid. The outline of an effusion of fluid spreads out at the base, its lowermost angle projects outward. A faithful mapping out of the right border of dulness is necessary. (6) The lower left angle of dulness, the relation of the apex beat to this angle. In cardiac enlargement or displacement the apex beats at the extreme left limit of the dulness and at its lowest level. Not so in pericardial effusion. The apex will beat somewhat inside and above the boundaries of dulness. (7) The first rib sign. In all cases of considerable pericardial effusion it was possible to feel the upper edge of the first rib; this means a rising up of the clavicle. This condition also occurs in some cases of dilatation of the heart. (8) The posterior pericardial patch of dulness. A patch of marked dulness is found at the left inner base, extending from the spine for varying distances outward. When all the signs in front support the diagnosis of effusion, the presence of this posterior patch of dulness furnishes a complete and crucial evidence of fluid. (9) Tubular breathing below the right mamma. This sign is not constant, but should be looked for in severe cases. (10) The posterior patch of tubular breathing and egophony. "Immediately below or slightly to the left of the tip of the left scapula a patch of about two inches in diameter presents well-marked tubular breathing and egophony." This is confirmatory of other signs. It is generally present. (11) The secondary pleural effusions. The occurrence of pleural effusions belong to the latter stages of pericardial effusion, and their diagnostic value is therefore diminished. (12) The large and slapping pulse of pericardial effusions. The peculiarity of the pulse is its great size and velocity of impact, and the sudden collapse of the wave.

SCHOTT TREATMENT AND AUSCULTATORY PERCUSSION OF THE HEART.

Sir W. H. Broadbent, in commenting on Dr. Bezley Thorne's paper, makes the following observations:—Obviously auscultatory percussion leaves much room for the exercise of the imagination, and any statements as to the variations in the size of the heart based on this method of examination must be rejected as absolutely untrustworthy. To ascertain the position and dimensions of the heart we must continue to employ the sober method of carefully collating the evidence afforded by palpation, percussion, and auscultation. That a diminution in the volume of the heart may take place under the influence of saline baths and certain movements there can be no doubt, but such diminution is an occurrence which is perfectly familiar to all who are in the habit of noting the changes in the size of the heart under other methods of treatment or from various causes. In a heart dilated from over-exertion, for example, the apex beat may often be felt to come in for half-an-inch towards the normal situation when the patient is simply made to walk two or three times across a room. The Schott treatment has undoubtedly potentialities of usefulness in certain forms of heart disease, and it is a matter of great interest and importance to ascertain with some degree of certainty and precision in what class of cases it is of most service. No advance can be made in this direction while it is employed indiscriminately in all form and stages of heart disease, including cases where perfec compensation has been attained and cases where no real heart affection exists, nor while statements are made which seem to imply that it is equally efficacious under all circumstances. It must be borne in mind, too, that any treatment which is powerful for good can also when misapplied do harm; grave risk, for instance, is incurred when the Schott methods are practised in cases of aneurism. (British Medical Journal, March 28, 1896.)

[See also article at p. 210 of this volume of the *Retrospect.*]

SENILE HEART.

Professor R. H. Babcock comes to the following conclusions in his paper:—(1) The term senile heart is unfortunate, because the degenerative changes underlying the disease are not limited to the aged. (2) The changes in the heart muscle are generally those of chronic myocarditis, and their real extent and location often escape recognition. (3) Radazewsky's investigations indicate that the connective-tissue changes affect the auricles more often than is generally supposed, and often exceed degeneration of the ventricles. (4) Fibrosis of the auricles causes cardiac arrhythmia, whereas fibroid degeneration of the ventricles does not produce irregularity of the pulse. (5) Cardiac dyspnœa has been shown by Zerner to depend upon swelling and rigidity of the lungs, in addition to pulmonary engorgement and accumulation of carbonic acid in the blood; and this probably explains the striking difference in the degree of dyspnœa displayed by patients with similar cardiac lesions. (6) That paroxysmal exacerbation of dyspnœa, called cardiac asthma, is due to disproportionate weakness of the left ventricle, and is most promptly and efficiently relieved by the hypodermic injection of morphine, one-eighth, and atropine, one two-hundredth of a grain. (7) Stadelmann's experiments appear to confirm Unverricht's assertion that morphine and atropine exert no antagonistic influence over attacks of Cheyne-Stokes respiration. (8) Nevertheless, since morphine hypodermically was shown to sometimes modify in a favourable manner the severity of the attacks, and since it blunts the patient's sense of dyspnœa and induces sleep, its employment hypodermically is justified in these cases. (9) Morphine should be administered in cardiac cases hypodermically, and in as small a dose as will accomplish the result desired; and given in this manner it acts as a powerful cardiac stimulant. (Medical Record, November 9, 1895.)

AFFECTIONS OF THE RESPIRATORY SYSTEM.

ACUTE PNEUMONIA.—Treatment of.

Dr. Ingraham recommends the application of a very high degree of heat to the whole chest by means of a "pneumonia jacket" (a flannel jacket to which coils of rubber tubing for the hot water are attached). According to the author it accomplishes the following objects:—(1) It hastens the various stages of the pneumonic process. (2) The high degree of heat not only hastens the disease processes, but sustains the vitality of the consolidated lobes. (3) It effectually prevents further extension of the pneumonic process. (4) It sustains lobular vitality, and consequently the lobe will not be so prone to chronic disease or to recurrent attacks of pneumonia. (5) It prevents complications. (6) It stimulates respiration, strengthens the heart action, and favours the performance in a normal manner of the various pulmonary functions, as regards both oxidation of the blood and elimination of carbolic acid and other respiratory products. (7) It relieves pleuritic complications. (8) It controls temperature. (New York Medical Journal, p. 415.)

ASTHMA, SPASMODIC.

Dr. Goodhart read a paper before the London Harveian Society. He regarded the disease as a purely nervous one. He showed that it began most often in early life, and that it was then most tractable. Treatment was directed to different ends. To relieve the attacks when in progress patients resorted to "fumes," but they were injurious in the long run. In a bad case the administration of morphia or of chloroform might be resorted to. To prevent an impending attack no drug was so useful as the combination of iodide of potash with lobelia. The true course of treatment, however, was to combat the morbid tendency, and to this end various measures were suggested and discussed. A wholesome open-air life, with ordinary diet and healthy exercise, always gave a better chance than a system of coddling.

Dr. Edward Squire unhesitatingly expressed his preference for the "fresh air," over the "hot house" treatment. Undue "coddling" is, in his opinion, harmful. With regard to localities suitable for asthmatics, we can say nothing in general terms; each patient must find out for himself what locality suits him best. Some asthmatics are better in the open country; some are most free from attacks in the smoky atmosphere of a manufacturing town. As to drugs, Dr. Squire had found such satisfactory results from iodide of potassium in large doses (grs. x to xx, three times a day) that he generally prescribes this for adults. He had often seen patients, who had had frequent attacks before admission, keep free from attacks for the six weeks or more, whilst in hospital. The iodide cannot, however, be considered a cure for the disease, as the attacks generally return when the remedy is discontinued. Chloroform inhalation is sometimes useful during an attack, but requires using with care. Dr. Squire had seen alarming collapse follow chloroform inhalation during an asthmatic attack. Morphine hypodermically will always give relief. The various "fumes" are undoubtedly useful in many cases. Dr. Squire advocated examination of the nose in asthmatic patients; he had had cases in children where removal of adenoids had cured asthma. He considered the prognosis good in children, but the disease is much more intractable in adults.

Dr. Greville MacDonald said that of 30 cases of asthma associated with nose disease he had had 20 manifestly relieved by local treatment, while of these 12 might be quoted as tantamount to complete cures. Of the 20, 4 were cases of obstruction due to septal deformities; 6 were vascular tumefaction or hypertrophy of the inferior turbinated bodies; 4 were polypus and 4 adenoids; while the remaining 2 were instances of that curious œdematous swelling over the upper and anterior portion of the triangular cartilage, so often associated with paroxysmal sneezing. The remaining 10 cases were all sufferers from polypus. He believed that the latter was more often associated with chronic bronchitis than simple spasmodic asthma, and must be considered as a concomitant rather than as responsible for the bronchial symptoms. From these statistics he purposely excluded cases of hay asthma, for he regretted to confess that he had but seldom found this symptom relieved by intra-nasal operation, although, as far as the more severe symptom, the sneezing, was concerned, he was greatly encouraged at the results of treatment. (Medical Press and Circular, December 4, 1895.)

BRONCHO-PNEUMONIA.

From Dr. Le Gendre's paper:—The treatment of broncho-pneumonia comprises at first hygienic measures and which are of great importance. The child should be placed in a large well-ventilated room with the windows open in summer from time to time to renew the air. In winter a good fire will keep the room at 64°, and it will be found useful to steam the room constantly with boiling water, to which some antiseptic agents, such as phenic acid, tincture of benzoine, eucalyptus leaves, &c., can be added. Very young children should not be left long in the cradle nor in the dorsal position; they must be frequently held in the arms. Older children should be propped up in bed, the feet and legs kept warm by being wrapped in cotton wadding. I give unhesitating confidence to the application of cold to the thorax according to the following method. We prepare compresses, tarlatan folded several times, of a length and breadth sufficient to envelope the whole thorax. They are steeped in cold water, with a fourth of alcohol added; the compress is wrung so as to be only well damped. The child is undressed as quickly as possible, and the cloth rolled around him; oil silk is placed over all, while the rest of the body is wrapped in blankets. At the end of a quarter of an hour the compress is removed, steeped again and replaced, and so on every quarter of an hour at first, then every half hour, and finally, every hour, according to the improvement obtained in the respiration, circulation, and the nerve system, for the habitual effect of this treatment is the attenuation of all these symptoms. If no improvement takes place, recourse should be had to the wet sheet. D'Espine and Picot advises the warm bath at 95° twice a day, with the cold application in the interval. Hutinel is a strong partisan of cold baths where the local lesions were not considerable. When the temperature attains 106°, the cold bath is always indicated, the first being at 82°, the other lower, but never below 64°. Cold water should be applied to the head while the child is in the bath. For my part, I have frequently employed, with success, baths at gradually cooling temperatures. I commence at 102°, an hour later, I give it at 95°, two hours after, at 89°, and every three hours subsequently at 86°. The effect produced is very marked; the child gets calm, the dyspnœa is decreased, and sleep comes on. Immediately after each bath something warm is given the patient. The internal treatment should consist in stimulant mixtures, alcohol, cafeine, ether, while depressants of every kind should be discarded, as well as the blister which is so often applied with evil effects to the little patient. I am more and more convinced that broncho-pneumonia in children gets well better by hydrotherapy, hypodermic injections of cafeine, alcohol, and good hygienic treatment than by the old methods. (Medical Press and Circular, April 15, 1896.)

CARDIAC INSUFFICIENCY.

It is the liver among all organs, next to the lung at least, that feels an excess of blood in the venous system. Engorgement of the portal circulation is present almost always in every case of heart disease. It is largely for this reason that mercurials are of the value that they are in heart disease. And if I have had any special success in the treatment of this class of cases, it is because I have recognised the value of mercurials. Mercurial purges and corrosive sublimate given in long-continued small doses are of the greatest importance. The fiftieth of a grain, or the sixtieth, or even the one-hundredth of a grain, of corrosive sublimate, given with the tincture of the chloride of iron, will sometimes effect almost a revolution, aiding your true heart tonics in the most remarkable manner; aiding, so to speak, in the digestion and absorption of the medicine. (Professor H. C. Wood, in *Atlanta Medical and Surgical Journal.* The Medical Age, January 25, 1896.)

EMPYEMA.—Bacteriology of.

Dr. Henry Koplik said that the purulent pleurisies of childhood might be divided, according to their mode of infection, into (1) metapneumonic; (2) streptococcus empyemas; (3) tubercular infections, and (4) fetid empyemas. In 15 cases of empyema occurring in children he had found in 9 the diplococcus of pneumonia in pure culture. Where the streptococcus variety is associated with a severe septic infection, as scarlet fever, the prognosis is much more grave than in the other forms, although, of course, the tubercular empyemas almost uniformly present a bad prognosis. These tubercular empyemas were associated with very marked thickening of the pleura. The fetid empyemas should be subdivided into (1) those in which there is a streptococcus or pneumococcus infection, and (2) those in which there is a mixed infection. Those empyemas which seek to cure themselves spontaneously by perforation through a bronchus are particularly apt to be of the fetid variety. According to Gerhardt, most of the pleurisies occurring in children are purulent, and it has been estimated that fully two-thirds are metapneumonic. (Pediatrics, February 15, 1896.)

Empyema.—Treatment of.

Mr. Crawford Renton concludes his paper with the following remarks:—Below the age of 23 it is unnecessary to remove portions of ribs, but above that age it is essential in order to insure contraction of the abscess cavity. In urgent empyema it is best to use no chloroform, but to freeze the skin with chlor-ethyl spray, which is both rapid and efficient, and the patient suffers no pain. In the absence of chlor-ethyl, carbolic acid may be used. In patients above 23, portions of ribs may be removed the day after the opening, or whenever the breathing is sufficiently relieved to bear chloroform. I am satisfied that in urgent cases chloroform is not devoid of danger. If the double operation must be completed at once, then let a portion of the pus be drawn off by an aspirator previous to giving the anæsthetic. In case 4 we had much anxiety as to the chloroform, and Dr. Connel, of Peebles, who was present, confirmed my observation at the time as to the danger of an anæsthetic in urgent cases. In cases 3, 5, 6, and 7 a portion of the pus had been aspirated previous to the chest being incised, and in these cases we had no trouble with the chloroform. The presence of pain on pressure as a symptom of empyema is most important, more especially in local collections, and this must be borne in mind as a valuable aid in the diagnosis of the point or points where pus is to be found. The pain is not, however, present in every case. As regards the operation, the use of chlor-ethyl is strongly recommended in the simple opening of the chest. The only special instruments required in removing portions of ribs are rib-bone forceps and a curved periosteum separator, not too sharp, to insure the safety of the artery on the lower edge of the rib. The simplest form of aspirator is Helmsley's, with which any amount of fluid may be removed with the least possible trouble. (The Practitioner, January, 1896.)

EPIGLOTTIS, SYPHILIS OF.

At a recent meeting of the Berlin Medical Association, Dr. Hansemann described a new syphilitic symptom hitherto not recognised as such, although it is of frequent occurrence. It is an inflammatory condition of the epiglottis, commencing at the extreme root of the tongue and working outward. The inflammation causes retraction of the epiglottis, which in time becomes anteflected and even doubled. In the autopsy of fifty-five cases with unmistakeable indications, Dr. H. noted twenty-five with the epiglottis anteflected, thirteen shrivelled and seventeen normal. In five cases the epiglottis was anteflexed without any other indications of syphilis, although atrophy of the root of the tongue was present in one case. As it is not infrequently important to be able to determine definitely the presence of constitutional syphilis at an autopsy, this condition of the epiglottis may well support the suspicion of syphilis. (Journal of the American Medical Association, February, 1896.)

HÆMOPTYSIS.—Treatment of.

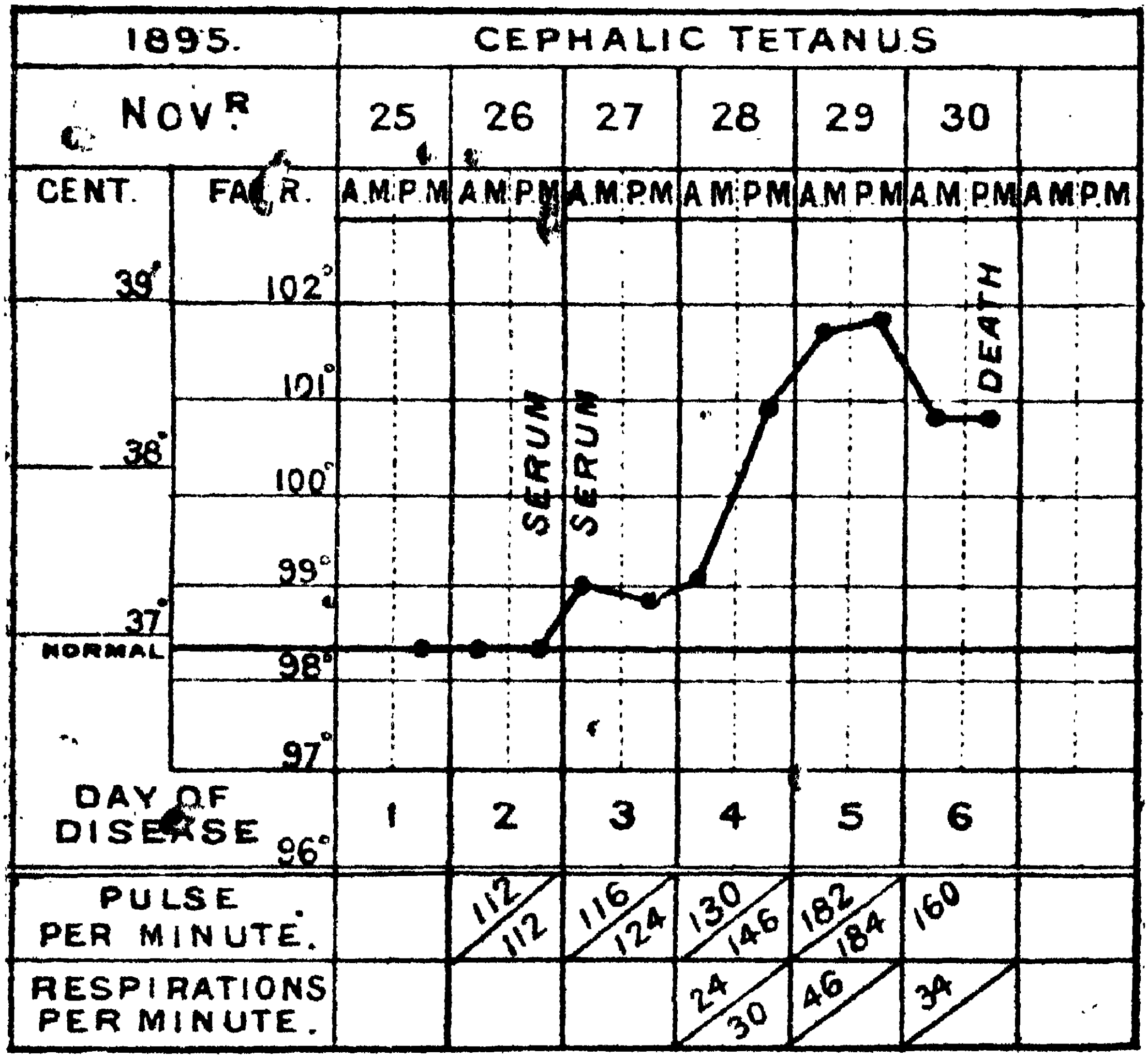
Scarpa (*Semaine Médicale*, 1896, No. 12) recommends the administration thrice daily of from twenty to fifty drops of a combination of equal parts of fluid extract and tincture of hydrastis canadensis. One may begin with the smaller dose and, should it fail to control the bleeding, increase by ten drops at a time to the larger. The determined dose is continued for several days after the cessation of the hemorrhage. When the hemorrhage is associated with, and aggravated by obstinate cough, from grain $\frac{1}{3}$ to grain $\frac{1}{2}$ of codeine, or from grain $\frac{1}{6}$ to grain $\frac{1}{3}$ of morphine hydrochlorate, may be added to each dose. It is always essential that both preparations be perfectly fresh. (Medical News, May 9, 1896.)

LARYNGEAL SPASM.

After recording a case in a lad, aged 19, Mr. John Burgess makes the following remarks:—This case brings under your notice a morbid condition which seems strangely overlooked in

Rectal alimentation should be had recourse to early in the disease. If possible, large quantities of fluids should be supplied in order to promote the excretion of the tetanus poisons by way of the kidneys.

The only hope in severe cases can lie in the serum treatment, and yet, up to the present time, its efficacy has not been established with absolute certainty. In the above-named case half the serum tube supplied by M. Roux was injected on the second day and half on the third day, but no trace of improvement could be detected even by the most interested witness.



The disease steadily pursued its course without being in any way influenced by the treatment. It is sometimes a matter of some little difficulty to get a rather large quantity of desiccated serum into solution, but this can be overcome by carefully rubbing it up to a fine powder before adding the water. Of course all apparatus and instruments are as far as possible sterilised. The water used in dissolving the serum in this case was, perhaps, rather warmer than desirable. Tizzoni and Cattani draw special attention to the importance of using cold ulcers may heal even when the lungs are far gone. When the infiltration is circumscribed and in the epiglottis, portions of the tissue may be excised. The subsequent treatment is to paint the surface with pyoktanin, or lactic acid may be used. Sometimes the whole diseased area is not easy to get at. These wounds generally heal very well. Sometimes there is hemorrhage, but this may be stopped by application of equal parts of lactic acid and perchloride of iron. Some operators use the scissors to cut off the diseased part when this is possible, and some use the electrolysis, putting one pole in the lesion and the other on the neck. The galvano-cautery is also used. In stenosis intubation has been suggested, and tracheotomy is a last resort in some conditions, but this is only justifiable to prevent suffocation. Thyrotomy has been practised under some circumstances, and even it has been proposed to extirpate the whole organ. As the disease is rarely primary in the larynx (only about five cases having been reported) this operation is not advisable. Such cases usually die. Most observers agree that the effect of this treatment is beneficial to the lung disease, and a few have the opposite view, but it seems rational that it must do good. It does not effect a cure, but it does prolong life. Relapses occur. In hectic fever, and when the disease is diffuse, this operation is contra-indicated. (Medical Record, December 7, 1895.)

LARYNGECTOMY, COMPLETE.

Mr. Woods showed before the Royal Academy of Medicine (Ireland), a man whose entire larynx had been excised in 1892 by Dr. Solis Cohen, of Philadelphia. The trachea opened externally in the middle line in the neck in front, and there was no communication whatever between the mouth and the respiratory organs. The man was, however, able to vocalise. Mr. Woods believed this was accomplished by gulping air into the œsophagus, and that this air was forced up again by pressure from below. The sound was made by muscular fibres or bands in the œsophagus, which had gradually been trained to perform this function. (Medical Press and Circular, February 5, 1896.)

LARYNX.—Direct Inspection of.

Under the name of "Autoscopie" (*Die Autoscopie des Kehlkopfes und der Luftrohre*, Berlin, 1896) Dr. Alfred Kirstein details a new method of examining the larynx and trachea. A long, strong spatula, semi-cylindrical in order to depress the middle portion of the tongue longitudinally, is the essential requisite of the new apparatus. It reaches to the epiglottis, where its depressed extremity hugs the base of the tongue as it is drawn forward, bringing with it the epiglottis by traction upon the glosso-epiglottic ligament. The thorax and neck of the patient being bent forward, as they would be in leaning over a fence, for example, and the head being extended backward, an almost straight line can be drawn from a point in front of his upper incisor teeth to the anterior wall of the trachea. The space comprised between this plane and that of the posterior wall of the pharynx is utilised. The observer's eye must be considerably higher than the patient's mouth, in order to guide his vision downward along this limited space. A little metallic casing is slipped over the proximal end of the spatula where it joins the handle, converting this portion of the instrument into a tubular passage with a flat top, which prevents the patient's teeth and moustache from getting into the line of vision. The illumination is best secured by means of an electric lamp inserted near the top of the handle, whence its rays are projected through a prism placed above so as to refract the light along the line of the tongue-depressor. It thus brilliantly illuminates the posterior wall of the pharynx, the epiglottis, the posterior wall of the larynx and of the trachea, sometimes even to and including its bifurcation ; and it discloses more or less of the anterior portions of larynx and trachea according to the anatomical relations of the parts, and the success of the instrumental interference in pushing the tongue and epiglottis out of the way of the rays of light. In some cases a spatula is used which reaches over the epiglottis and presses that structure back upon the base of the tongue. This is chiefly for use in certain conditions under local or general anæsthesia. It will be at once understood, as freely expressed by Dr. Kirkstein, that this method of illumination is applicable in only a limited number of cases, but that where it is applicable it will extend the usefulness of laryngoscopy beyond the limits of the ordinary mirror. This will be especially the case in lesions in the posterior portion of the larynx and trachea to which direct access can be obtained, and therefore instrumental manipulation be made easier of execution. (The American Journal of the Medical Sciences, February, 1896.)

PASSAGES, FOREIGN BODIES IN UPPER AIR AND FOOD.

In the *Medical Chronicle* (vol. iii. No. 1) there is an interesting and valuable paper by Felix Semon on the above subject. In the large majority of his cases, he found that the foreign body at the time of the consultation was no longer present. The after-effects, viz., pain, pricking or sensation of the presence of a foreign body, apparently remains longer in this than in other parts of the body. At the same time, the opinion that a foreign body is no longer present should only be expressed after a careful and searching examination of all the parts concerned, and the positive exclusion of the possibility of a foreign body being actually impacted. The examination should always be begun by a careful inspection with a good light, and only after this method has been thoroughly exhausted should the finger or any instrument be introduced into the throat. It should be remembered that the power of localisation of sensations in the throat is very defective, and hence the examination should not be limited to one part of the throat. A patient who has an impacted substance between the tonsils or in the naso-pharynx will often locate the sensation as if the foreign body were in the laryngo-tracheal region. Strings of tenacious saliva stretching across the throat so closely resemble a fish bone, that prolonged and careful examination may be necessary before the actual bone can be recognised. With regard to treatment, Semon emphasises two important principles —(1), No foreign body, the presence of which has been actually detected, ought to be allowed to remain impacted, even if at the time it does not produce any serious symptoms; and (2) no attempt should ever be made to ram an angular or pointed foreign body forcibly down. The actual method of removal must of necessity depend greatly upon the nature and size of the foreign body, and the locality in which it has become impacted. (Edinburgh Medical Journal, March, 1896, p. 875.)

PLEURAL EFFUSION.—After-Treatment.

The general treatment is directed to restoring the patient to good health by means of change of air, good food and tonics. Special treatment will be directed towards getting the lungs to expand completely, and to remove any contraction of the side which the pleurisy may have resulted in. For this purpose gentle gymnastics are useful, especially such calisthenic exercises as will expand the chest without unnecessarily violent effort. In the same way walking, rowing, and to some extent mountain climbing, are useful; but the exercise must not be overdone, and must in all cases stop short of actual fatigue. These aids may be supplemented by methods more especially directed to the lungs. The patient, for example, may be caused to expire under increased pressure, and for this purpose various forms of apparatus have been devised such as Waldenberg's gasometer, and others. A simple method which I have used with advantage is to cause the patient to breathe through a fairly large tube, the mouth of which is placed at the bottom of a tall jar or jug filled with water, so that expiration is made under a pressure of about 18 to 24 inches of water. In dealing with the defects left behind by pleuritic effusion, the essential factor in all methods of treatment is time. Time alone will lead to cure or great improvement, without any special methods of treatment at all; for at the best these are but auxiliary. (The above is from Dr. Samuel West's article in St. Bartholomew's Hospital Journal, May, 1896.)

Pleural Effusions.—Free Incisions into.

The remarks made at a recent meeting of the Clinical Society of London by a leading speaker are likely to have such weight in extending the practice of free incisions that the publication of a case which tells in the opposite direction cannot fail to be of some interest. I admitted on July 21 last a boy, aged 14, with the right pleura full of fluid; the liver was very much enlarged, the heart was dilated, and the pulse was frequently unequal, irregular, and occasionally intermittent. The effects of pressure were further evidenced by the presence of some albumen in the urine. The patient had been six months ill, but the presence of fluid not having been recognised no steps had been taken to deal with it. I tapped him immediately with a fine aspirateur-needle, and removed 68 ounces of straw-coloured fluid, with the usual improvement in the general condition. No impression, however, was made on the size of either heart or liver. I believe the enlargement of both was caused by the prolonged venous obstruction which had existed for months, and if I am correct in this view of the case it goes to show how important are early diagnosis and treatment. The fluid recurred several times, and repeated tappings failed to produce permanent cure or relief. The boy was greatly oppressed anterior to each tapping. The quantity of fluid removed was, on an average, about 70 ounces. An interval of a few days could alone be allowed to elapse between each. The cases published by Drs. West and Morison led me to employ a free incision. This was accordingly made on August 12 in the mid-axillary line and as low down as the liver permitted. A ½-inch hose drainage-tube was inserted, and fluid flowed out in quite a stream. The tube was kept in and made to touch the bottom of the cavity. Antiseptic injections were daily used, and occasional inversion was also had recourse to. Suppuration ensued, but nothing could keep the cavity sweet-smelling, and except that the breathing was more tranquil no improvement was observable in any of the other symptoms. In the outcome the patient succumbed on September 9 from exhaustion and hectic due largely to the discharge. A similar result occurred in another case of mine with identical heart and liver symptoms, where tappings were alone employed, but the patient made a very much more prolonged fight. It is, of course, not permissible to draw conclusions of a very absolute nature from a few cases only on either side, yet I confess the result obtained in this does not hold out any encouragement to fall back on the system of free openings. It seems to me a very serious thing to open so large a serous surface to the free action of the air, and thus to abandon at one swoop all the advantages of Dieulafoy's invention, and with them the lessons taught by the mass of successful cases that have been the outcome of the same invention. These observations are thrown out because one leading speaker at the Clinical Society (Mr. Howard Marsh) talked in a strain as if free incisions were to be employed in every case, whereas I think they should be confined to those cases where repeated tappings extending, not as in the above case, over weeks, but, I would say, over months, may fail. It is even more than likely that such cases will be found to have phthisis, or some other disease, behind the effusion, for a very large experience in this line enables me to state that cure by simple tapping is the all but certain result in serous effusions where the disease is uncomplicated. (Medical Press and Circular, December 11, 1895.)

PNEUMONIA, CROUPOUS.—Treatment of by Digitalis.

Dr. Hans Naegeli-Akerblom (*Centralb. f. inn. Med.*, August, 1895) draws the following conclusions:—(1) Digitalis is one of our most valuable therapeutic agents in the treatment of pneumonia. (2) It acts favourably on the heart, lungs, and blood. (3) Used in large doses it shortens the course of the disease. (4) In large doses it is markedly useful in increasing the leucocytes, and especially by favouring polynucleation. Single doses of one gramme (16 grains) twice to four times daily may safely be given. (5) The employment of cold water with the treatment by digitalis is very useful, and is a further means of promoting hyperleucocytosis. (The Practitioner, November, 1895.)

PNEUMONIA, SENILE.

From Dr. J. B. Ayer's Paper in the *Boston Medical and Surgical Journal*, March 26, 1896:—Typical senile pneumonia is liable to be latent, masked, æsthenic and migratory — this last characteristic (the tendency to wander from one part to another of both lungs) being a distinctive feature. Quoting Osler:—"In old age pneumonia may be latent, coming on without a chill, the cough and expectoration slight, the physical signs ill-defined and changeable, and the constitutional symptoms out of all proportion to the extent of the local lesion." The unreliability of temperature, pulse and respiration, the great prostration and tendency to early delirium are to my mind prominently marked features of typical senile pneumonia The danger of overlooking pneumonia must be constantly borne in mind. I doubt if more errors of omission are made in medicine than in overlooking this disease. "When a generally ill-defined illness is present in an old person," says Loomis, "lobular pneumonia is to be expected. I never regard the examination of an old person complete, no matter what the trouble, without examining the chest." "Sometimes," according to Lépine, "the patient falls into a comatose, apoplectiform state with unilateral paresis and hyperæsthesia, and death supervenes in the midst of the coma which the pneumonia has provoked." I can speak from experience of the great difficulty of making a diagnosis—of the rapid course—of the early delirium. I have seen an elderly patient die within eighteen hours after the discovery of pulmonary congestion, though vague and general symptoms had been present during the two preceding days. A slight feeling of chilliness is a danger signal. A gentleman of 85 was seemingly threatened in this way on several occasions, but quickly recovered under careful nursing; but at the end of a few months he succumbed to senile pneumonia, quickly becoming semi-comatose and dying in three days. One cannot be too careful with the aged patient when any symptom occurs which vaguely suggests a pulmonary attack. If he will remain in bed and be carefully watched, there is a good chance of "warding off" pneumonia, vigilance being the price of safety.

PNEUMONIA, SYPHILITIC.

At a meeting of the Moscow Dermatological Society, Pospelow and Kontrim (*Monatsh. für prakt. Dermatologie*, 1895, No. 12) each reported two cases of syphilitic pneumonia that yielded to treatment with mercurials. Hæmoptysis occurred in three of the cases, and fever with sweating was present in two. The lesion was localised to the apices. In one of the cases tubercle-bacilli were found in the sputum, and the process was believed to be tuberculous. Treatment with mercurial inunctions and sulphur-baths, with a residence in Egypt, was followed by general improvement and disappearance of fever, cough, and expectoration. The patient had been well for three years at time of the report. In this case it is believed that the tuberculous affection was implanted upon the syphilitic pneumonia, disappearing with the latter. (Medical News, February, 1896.)

PULMONARY ŒDEMA.

Dr. Goodman writes of the good effect of venesection in pulmonary œdema occurring in extensive pneumonia. On the ninth day the temperature rose to 106·8°, pulse 140, and œdema of lungs set in. There was alternating delirium and stupor, urine and fæces were passed involuntarily. In spite of heroic stimulation the patient sank rapidly. The tenth day the pulse was 160, large and bounding ; cyanosis was more marked ; the veins of the neck distended, and the entire venous system was engorged. The right side of the heart seemed to be unable to relieve itself of the accumulation of blood. To relieve it artificially by venesection suggested itself to me. The result of the depletion was soon manifest. The labouring heart, no longer overpowered by the engorged blood, quieted down, the cyanosis diminished, the pulse became slower, more regular, its bounding quality disappeared, and in half an hour the œdema of the lungs had cleared up. On the following day the temperature was below 103°, the delirium disappeared, and the case began to look hopeful. The crisis, however, was not reached until the fourteenth day. Convalescence was interrupted by a pleurisy with effusion, which developed in the left chest. This disappeared under the use of diuretics, and the patient was discharged cured. (Cleveland Medical Gazette, April, 1896.)

TUBERCULOSIS, TEMPERATURE IN CHRONIC.

Dr. Channing's paper thus concludes :—It would be interesting if a temperature curve could be plotted which might be regarded as characteristic, if not pathognomic, of chronic tuberculosis. This can only be done by careful observations in a considerable number of cases. In the case under discussion the following points are brought out, which are, I believe, of significance from a diagnostic point of view, and of especial value in obscure cases, and, as far as they go, throw light on the temperature curve :—(1) An average considerably above normal. (2) An almost invariable rise at night. (3) Periodicity of a maximum elevation of several degrees, occurring at irregular intervals of a few days. (4) Gradual ascent to the maximum for two or three days, with a decline sometimes gradual, sometimes sudden ; the ascent at night, the decline in the morning. (5) Protracted continuance of a high temperature for months or years. (6) Less constitutional reaction from the periodical rises of several degrees, than would be expected. (Boston Medical and Surgical Journal, December 19, 1895.)

AFFECTIONS OF THE DIGESTIVE SYSTEM.

APPENDICITIS.—Treatment by Operation.

Dr. W. Meyer sums up the indications for operation thus :—(1) In cases of diffuse perforative appendicitis the operation must always be done at once. Patients have the best chance to recover if operated upon within the first twelve hours.

Exceptionally patients get well without an operation. (2) In cases of acute appendicitis the patients always need careful observation. If the pulse goes up above 116 to 120 and has the tendency to stay there, the indication for an operation is given. In case of doubt, the operation is better than waiting. (3) In cases of subacute (mild) attack of appendicitis, also after the first severe attack from which the patient recovers without immediate operation, the appendix should be removed. The appendix once inflamed, has to be looked upon as a diseased organ which is very apt to give repeated and more serious, even fatal trouble in the future. When done at this time, we can almost always perform the blunt division of the abdominal muscles according to the direction of their fibres and thus save the patient the probable appearance of a ventral hernia. (Medical Record, February 29, 1896.)

DIARRHŒA, FATAL.—Due to Ascaris.

The patient, a child ten years of age, was sent to the local municipal hospital for treatment of diarrhœa. The patient looked very ill. The eyes were sunken, the pulse small and thready, the face shrunken and anxious. On inquiry I learned that she had passed that morning four or five watery motions, and along with her motions, one big round worm. Had it not been for the presence of this worm, I would have treated it as a case of diarrhœa. But this single worm pointed to no other conclusion than that this diarrhœa was set up by worms. Acting on this diagnosis, I gave her one two-grain powder of santonine, and in addition, a stimulant mixture to brace her up. Next morning she passed two worms. The medicine was continued, and she passed the following day nine worms, the day after nine worms, the next day 28 worms, then 31, till in eight days she passed 111 worms. The diarrhœa was kept under control by suitable astringents; but she gradually got worse, and died a week later. Considering the number of worms passed, namely, 111, it is no wonder that these set up an irritation which brought on the fatal diarrhœa. Whether the diarrhœa was due to quite a distinct cause and that the worms did not contribute to the affection are questions which I leave to the decision of the reader. (From Dr. Mitra's paper in the Boston Medical and Surgical Journal, December 5, 1896.)

DUODENAL ULCER.

Mr. L. A. Dunn read before the London Clinical Society notes of a case of successful suture of a duodenal ulcer. The patient whilst at work felt a sudden pain in the epigastrium, attended with nausea and faintness. He was taken home and subsequently to Guy's Hospital, on August 2, 1895. The abdomen was distended and remarkably tympanitic. The normal hepatic dulness was absent. He was suffering great pain and had an anxious expression of countenance. The abdomen was opened by median incision above the umbilicus, which allowed of the escape of a quantity of gas and yellowish fluid. A small perforation was found in the anterior wall of the first part of the duodenum. This was closed with five silk Lembert sutures, and the abdominal cavity flushed out with boiled water. The flushing process interfered with respiration and so could not be thoroughly carried out, hence a Keith's tube was put into the upper parts of the wound for the first twenty-four hours. The patient progressed well for ten days, when his pain returned and his temperature was raised. He became worse till August 27, when the abdomen was opened a second time, on this occasion along the right costal margin, as it was thought that a collection of pus had formed between the liver and the diaphragm. Nothing was discovered except a few adhesions in this region, chiefly beyond the reach of the finger. An exploring needle passed through the eighth intercostal space was felt to traverse the abdomen and perforate these adhesions. A drop of pus was evacuated by this method. The wound was closed, the intention being to open and drain the abscess through the thorax at a later date. This was not, however, required, as the temperature fell immediately after the operation, and remained low till the sixth day, when the wound was found to be distended with pus. The removal of two sutures sufficed to evacuate this, after which the recovery was rapid. (The Lancet, April 4, 1896.)

ENTERO COLITIS.—Treatment of, in Young Children.

Dr. Clemow, in the West London Medical Chirurgical Society, drew attention to the undoubted bacterial origin of the disease, upon the recognition of which fact depended the adoption of rational methods of treatment, the indications of which were:—(1) To evacuate the intestines of their fermenting contents; (2) to combat the processes of decomposition by drugs; (3) to give only such food as shall maintain strength, and at the same time minimise the introduction of fresh organisms; (4) to treat symptoms as they arise. Of antiseptic drugs, he preferred subnitrate of bismuth and calomel, and he deprecated the routine use of opium and astringents. He had been much impressed with the value of intestinal irrigation, with regard to the employment of which he had formed the following conclusions:—(1) The operation exercises no influence upon the course of tuberculous ulceration of the intestine; (2) it is probably of little or no value in the ordinary cases of dyspeptic diarrhœa of infants; (3) it may be expected to benefit true cases of entero-colitis, and especially those in which the colon is largely involved; (4) it requires to be carried out with great caution, especially where there is marked prostration.

Dr. Colman referred to the possibility of accidents in irrigation. From post-mortem experiments it was deduced that two feet was sufficiently high for cases in which the colon was softened. (British Medical Journal, January 25, 1896.)

GALL STONES.—Intestinal Obstruction from.

By Dr. E. Lobstein (*Beitr. zur klin. Chir.*, Band xiii., Heft 2, 1895). Two new cases of intestinal obstruction from gall stones are reported, together with 90 cases gathered from literature. Of the 61 of these cases not operated upon, 32 recovered after the passage of one or more stones with the fæces; the remaining 29 died of perforation, peritonitis, or exhaustion. Of the 31 cases operated upon, 12 recovered, 19 died; but as many of the fatal cases were operated upon when moribund, their death should not be charged to the operation. The stones are usually oval in shape and from five to seven centimetres in length. They most frequently reach the intestines by direct communication with the gall-bladder, but occasionally pass through the common duct. The passage of the stone into the intestine is usually painless, only 17 of the 92 cases presenting premonitory symptoms before the obstruction occurred. The stone seldom remains at the point where it entered the intestine, but passes downward and most frequently stops in the lower part of the ileum. Czerny claims that obstruction rarely occurs until the stone has passed into the pelvis and formed there an angulation of the intestine. The disease occurs more frequently in women between the ages of forty and sixty. The symptoms for the most part are those of acute obstruction with severe abdominal pain and early fæcal vomiting. One is seldom able to feel the stone through the abdominal walls. The medical treatment consists of rest, the free use of opiates, avoidance of cathartics, washing out of the stomach, and warm-water enemata. Rarely massage over the tumour is effective. The strength of the patient should be kept up by giving milk and brandy at frequent intervals and nutrient enemata. Operation should not be too long delayed if other means fail to give relief. The abdomen can be opened in the median line, the intestines examined systematically until the obstruction is found. If the stone be movable, it can be pushed along until it enters the large intestine; otherwise it should be removed through a longitudinal incision and the wound closed by two rows of sutures. (Annals of Surgery, January, 1896, p. 125.)

Gall Stones.—Varieties of.

Hanot and Letienne publish an interesting note based on their extensive researches on biliary calculus. They divide calculi into those of microbic and non-microbic origin. The fresh microbic calculi they describe as of irregular form, vaguely round, raspberry-like, and apparently constituted of numerous small elementary concretions, many of which are to be seen free in the bile. These stones are not faceted, and resemble, as far as form is concerned, dried bread-crumbs. Their crystalline arrangement is not regular, and they are not laminated. They are relatively soft in consistency and crumble when pressure is applied, and may or may not have a central nucleus. Their colour is generally pale. The old concretions of microbic origin correspond to the ordinary description of biliary calculi, occurring either as the solitary, ovoid, laminated stone or the multiple faceted stones, also having a laminated structure and usually a central nucleus. The calculi not demonstrated as of microbic origin were only observed in cases where there was complete obstruction of the main ducts due to pressure from without and not to stone. These calculi are remarkable for their irregularity of form ; they are amorphous, and show numerous indentations on their surface, containing yellow bile-pigment, and contrasting strongly with the almost black colour of the stone itself ; they are very hard and not faceted. The authors state that the organism almost invariably connected with the stones of microbic origin, and found also in the bile in these cases, was the bacillus coli communis.—*Comptes Rendus de la Sociéte de Biologie*, December 27, 1895. (The American Journal of the Medical Sciences, March, 1896.)

GASTRIC CARCINOMA.—Diagnosis of.

In 1892 Martins and Luttke showed that lactic acid was not a normal constituent of the gastric contents, and this fact has been turned to account by Boas in respect to the diagnosis of carcinoma of the stomach. He devised a meal test, consisting of a tablespoonful of oatmeal flour to a litre of water. The stomach to be examined is thoroughly washed out at bedtime and the test meal given. The contents are withdrawn in the morning and examined for lactic acid. Boas found that lactic acid was never present at any stage of normal digestion, nor was it present in any abnormal condition of the stomach save carcinoma, in which disease it is almost invariably present in large quantities. Cases of cancer, however, may exist in which no lactic acid is found. In a practical paper upon this subject recently read before the surgical section of the Buffalo Academy of Medicine and published in the *New York Medical News*, Dr. Allen Jones states that Boas' method had afforded him valuable assistance in the diagnosis of carcinoma, and in a few cases he had been better able by its assistance to make an early provisional diagnosis before any tumour was palpable. These results have been confirmed by other observers, and thus it would seem that in all cases of suspected carcinoma of the stomach the test devised by Boas would be worthy of a trial. (Medical Press and Circular, March 18, 1896.)

GASTRIC ULCER.—Diagnosis of Perforation.

The physical examination of the patient is of great importance. In the earliest stage of the trouble the pallor, the anxious countenance, the feeble pulse, the thoracic respiration, and the rigid abdomen, all point to the injury to the peritoneum. Just as in beginning appendicitis abdominal rigidity is sometimes more marked on the side where the lesion is situated, so in perforation of the stomach the abdominal muscles of the left side are apt to be more tense than those of the right side. If the stomach was empty, or nearly so, when perforation occurred palpation of the abdomen would only serve to locate the tenderness, and show the rigidity of the muscles. If a large amount of fluid has escaped from the stomach, its presence may be demonstrated by the usual tests for gastric fluid. In certain cases the induration in the wall of the stomach about an ulcer makes a tumour which can be felt by abdominal palpation. This is worth remembering in this connection, although the tenseness of the abdominal muscles in perforation make deep palpation difficult. If gas has escaped from the stomach, or has developed by fermentation of the escaped gastric contents, the hepatic and splenic dulness may be reduced in area or wholly disappear. It is evident that this condition might also follow intestinal perforation. But when the abdomen is opened the distinction between the two is plain, for the gas from the stomach is without odour, or slightly sour, while that from the intestines has a fæcal odour. (From R. F. Weir and E. M. Foote's paper in the Medical News, April 25, 1896.)

GASTROSTOMY.—After-Treatment of.

The greatest trouble that attaches to the after-treatment of a gastrostomy case is the prevention of leakage of stomach contents and the digestion of the skin around the opening, causing, to say the least of it, very severe discomfort to the patient. Many plans, both operative and mechanical, have been tried, and with varying success, by various surgeons; but having now under my care a man of middle age, on whom I did gastrostomy for epithelioma of the œsophagus more than two months ago, and in whom there has been no leakage whatever, though the patient is walking about and feeds himself, I think the method adopted should be recorded. The plan on which I went was one that I am in the habit of adopting when desiring for any reason to examine a sinus to its bottom; it is to dilate the sinus with laminaria and sponge tents instead of incising it, and the result is that the inspection of the sinus or removal of a buried suture, or whatever may have hindered healing, being accomplished, the sinus, being only stretched, mechanically contracts again in a very short time. I carried out this principle in this case of gastrostomy. On the fourth day after the attachment of the stomach to the parietes the viscus was opened only enough to admit a No. 10 catheter, and then this small opening was dilated with tents till a short piece of rubber tube, the thickness of the forefinger, could be introduced and tied *in situ*. The stomach walls—from mere physical reasons—contracted now firmly round the tube, and from the time of its introduction there has not been a vestige of leakage. The tube, which only just projects into the stomach and about one inch externally, is kept corked, the cork being removed at meal times; and then with a funnel and a tube that will pass into the lumen of the permanent tube the patient easily feeds himself. Around the tube, on the skin, boracic acid ointment, with a large proportion of chalk in it, was smeared to counteract any acidity should there be regurgitation at any time; but this has never occurred. Had the opening into the stomach been made with a knife and then the large tube at once inserted the subsequent contraction, though it would have held the tube well gripped, would not, in my opinion, have prevented leakage, for in this case there would have been only the cicatricial contraction to have relied upon, but where the opening is made by dilatation the gastric musculature remains uninjured and, I believe, around the tube acts the part of a sphincter, and thus there is an active as well as passive hold. (British Medical Journal, Jan. 4, 1896.)

LIVER, CARDIAC.

Under the above title Prof. Lépine, of Lyons, has just published an article on the treatment of hepatic affections as a sequence to certain forms of heart disease. It is well known, says the writer, that the liver in its normal condition is a very soft organ, and distends like a sponge under the influence of the sanguine flux. Consequently, when for any reason the tension increases in the right auriculum, the liver increases rapidly in volume, provided, however, that no cirrhosis exists which, by the development of the conjunctival tissue, deprives the organ of its softness and elasticity. The edge, which is scarcely visible in the normal state can be felt far below the false ribs, hard and resisting. If, on the other hand, the tension in the right auriculum disappears, almost immediately the liver disgorges itself and returns to its primitive volume. This great permeability and softness of the liver explains sufficiently the facility with which can be observed the hepatic pulsations described by Prof. Potain, and met with in each case of insufficiency of the tricuspid valves. It follows naturally that the treatment of cardiac liver should consist in diminishing as much as possible the tension existing in the auriculum and the inferior vena cava. I had recently, relates M. Lépine, in my wards, simultaneously three patients suffering from insufficiency of the tricuspid valves, and presenting, each of them, an enormous liver, the lower edge reaching as far down as the umbilicus. In one of them the affection was of recent date. Under the influence of digitaline the dilatation of the right heart diminished considerably, but the lower edge of the liver remained in the same position, at which I was much surprised. In seeking the cause of this anomaly, I found that all the patients ate well, and especially a good deal of meat. I put them immediately on a milk diet, and soon I had the satisfaction of seeing the liver recede almost completely under the false ribs. After all, the fact was not very extraordinary, as digestion and above all that of meat, produces a notable congestion of the liver, as may be proved by opening the abdomen of a dog after a heavy meal; the portal vein will be found to be enormously distended and the mesenteric arteries to beat with violence and the liver considerably distended. The natural inference to be drawn from this physiological fact is the necessity of excluding meat from the diet of patients suffering from tricuspid disease. (Medical Press and Circular, January 22, 1896.)

ŒSOPHAGUS, VARICES OF.

Friedrich, in a recent number of the *Deutsche Archiv. für klin. Med.*, makes an interesting communication on a case of this rather rare condition. A girl, six and a half years old, had for two years and a half suffered from headache, pain in the abdomen, digestive disturbance and weakness. Later repeated hæmatemesis had ensued. When first seen by Friedrich, the child was very pale, owing to an attack of bloody vomiting on the day before. Physical examination of the chest was negative; the abdomen was moderately distended, but not tender. The probable diagnosis was ulcer of the stomach, and treatment for this supposed condition was begun. After several days the hæmatemesis recurred, the vomitus being bright red blood mixed with dark clots. Bloody stools followed, and the child became so weak from loss of blood that salt infusion was thought of, but was not necessary, as improvement took place under iced milk and opiates. An attack of chorea came on ten days after the hæmatemesis, attended by cardiac dilatation and murmurs, which were heard also over the veins at the base of the neck. Several weeks later, after an error in diet, severe vomiting of blood again ensued, and the child died. At the autopsy a high degree of varicosity of the œsophageal veins was found. The veins ran in two cords, of which the right was the larger. There were numerous anastomoses between the cords, and in the loose connective tissue between the trachea and œsophagus there was another cord of varicose veins. The mucous membrane of the stomach was pale and not swollen. (Boston Medical and Surgical Journal, April 3, 1896.)

PAIN, SUDDEN AND ACUTE, IN ABDOMINAL DISEASE.

In the differential diagnosis of these various abdominal conditions do the mode of onset, character, and seat of the pain help us. Certain conclusions might be drawn :—(1) That the more sudden the onset, as a rule, the more severe the pain, and the more sudden and severe the pain, the less does its site indicate the seat of the disease. (2) That, given a case of sudden and acute abdominal pain, it will be most likely one of the conditions mentioned. (3) That if the onset, taking the mode of onset alone, be very precipitate, then internal strangulation, acute peritonitis (perforation), appendicitis, should first be thought of. (4) That, if the pain be very severe, agonising, and more or less continuous, then acute peritonitis (perforation), internal strangulation ; if severe, at times agonising and paroxysmal, then intussusception, volvulus, hepatic, renal, or intestinal colic. (5) That, if the pain be accompanied by diffuse and especial abdominal tenderness, then acute peritonitis ; if tenderness localised and early, volvulus ; if localised and later, intussusception, appendicitis, internal strangulation, hepatic, and renal colic ; if pressure relieves throughout, intestinal colic. (From Mr. Andrew's paper in the Glasgow Medical Journal, March, 1896.)

PANCREATIC HEMORRHAGE.

By V. Durande, in the *Rev. Internat.* The author formulates the following conclusions :—(1) Pancreatic hemorrhage is a pathological condition sufficiently characterised by a well defined group of symptoms to merit its being separately placed in nosology. (2) It usually occurs in portly individuals, in obesity, in which the visceral vessels have suffered fatty or atheromatous degeneration. It has also been observed in subjects of syphilitic arteritis. (3) It is characterised by a sharp, sudden abdominal pain, accompanied by acute tympanism, nausea, vomiting, and usually constipation. The pain is usually pigastric, radiating from above toward the pelvis, but scarcely from below upward toward the shoulder; it is increased by pressure upon the splenic region; the hepatic region presents nothing abnormal. Collapse, anxiety, chilliness, although the temperature is usually a little above normal, small and rapid pulse, embarrassed respiration. Death usually follows in several hours or several days. If several days elapse, there are usually fatty stools in evidence, sometimes diabetes appears. (Cleveland Medical Gazette, December, 1895.)

PERITONEAL CAVITY, WOUNDS OF.

At the end of his paper, Prof. Tiffany says that the following propositions seem to be justified:—(1) A penetrating wound of the peritoneal cavity is not accompanied by symptoms commensurate with the extent of the injury. (2) Many fatal lesions may be present, yet give rise to no marked symptoms. (3) Fatal lesions may exist, yet shock be wanting. (4) The wound of entrance should be enlarged, and, if the missile have entered the abdomen, a section is called for. (5) Operation is proper soon after the injury, before the peritoneal membrane has become infected, or much blood lost. (6) Flushing the open peritoneal cavity with hot water, or hot normal salt-solution is an excellent stimulant to the heart. (7) The abdominal wound should be closed when practicable without drainage. (The American Journal of the Medical Sciences, May, 1896.)

PERITONITIS, DIAGNOSIS AND TREATMENT OF GENERAL SEPTIC.

Mr. C. B. Lockwood read this paper before the North London Medical and Chirurgical Society. After referring to the extreme fatality of general septic peritonitis, he said that of late some cases had been saved by surgical measures. Success might be greater if an earlier diagnosis was made. As the greatest difficulty of diagnosis was met with in peritonitis due to internal causes, that class of case was mainly referred to. In the vast majority of cases the symptoms of general septic peritonitis were the symptoms of acute intestinal obstruction due to mechanical causes. In peritonitis the most reliance was to be placed upon:—(1) The non-passage of flatus or of fæces; (2) the abdominal distension; (3) the absence of vermicular movement; (4) the collection of fluid in the pelvis; (5) upon evidences of inflammation above the cæcum, Fallopian tubes, gall bladder, or elsewhere; (6) the pulse; (7) the vomiting; (8) the previous history. In most cases it was impossible, with the means at present available, to diagnose acute general septic peritonitis from acute mechanical obstruction. The operation of laparotomy in general septic peritonitis was discussed.

Especial stress was laid upon rapidity and precision in operating, upon the thorough emptying of the distended intestines, and upon the prevention of shock and collapse. Lastly, the influence of the kinds of peritonitis upon the prognosis was mentioned. In bacillary peritonitis the effects upon the serous membrane were superficial and capable of recovery. In streptococcus peritonitis the bacteria had penetrated the depths of the peritoneum and could not be assailed by ordinary measures. Since November, 1893, the author had operated upon 10 cases of acute general septic peritonitis, of which 3 had recovered. Of the latter, 1 was due to gangrene or ulceration of the vermiform appendix, 1 to a perforation of the ileum, and 1 to salpingitis. In considering the fatality in these cases the inevitably deadly nature of the disease had to be remembered. (British Medical Journal, March 21, 1896.)

PYLORIC OBSTRUCTION FROM GALL STONES.

Galliard (*La Presse Méd.*, October 5, 1895) has recently reviewed this subject in an interesting manner. He comments on the rarity of the condition, and the still greater rarity of its appearance at the autopsy table. He cites several interesting cases where faceted gall stones had been vomited by the patient, or even passed by way of a stomach-tube. The mechanism of the obstruction would seem to be variable. In one class of cases the stone or stones ulcerate into the stomach cavity, adhesions having first formed, and then get into and occlude the pylorus. Again, when adhesions have taken place between the pylorus and the gall-bladder, the former becomes a fixed point, and, as it can no longer recede before a gall-bladder distended with stones, the pyloric lumen can be occluded by their pressure. In another class of cases adhesions form between the gall-bladder and the stomach and by their innate power of construction occlude the pylorus. The occlusion may at first be only partial, but, the pylorus being fixed, the gradually distending stomach drags more and more upon it and in this manner increases the occlusion. The condition would seem to be difficult to diagnose, except in those cases where gall stones are vomited or brought up by the stomach-tube. (The American Journal of the Medical Sciences, January, 1896.)

STOMACH, TREATMENT OF ULCER OF.

In the *Progrès Médical* for March 7, Dr. Paul Cornet says that the treatment to be carried out in this affection varies according to the presence or absence of hemorrhage. In the first condition absolute rest and immobilisation of the stomach are indicated. There should be complete abstinence as regards food, not even ice being allowed, as it is more injurious in its effects than useful. Occasionally a blister or compresses of ice over the epigastrium give good results. If the hemorrhage persists, a syringeful of the following solution may be injected into the region of the stomach :—Dialyzed extract of ergot, 30 parts ; distilled water, 150 parts ; carbolic acid, 3 parts. No nourishment should be given, although if the patient is weak and the circumstances present some danger, alimentary enemata, such as the following, should be resorted to exclusively :—Milk, 8 ounces ; salt, 1 teaspoonful ; red wine, starch, each, 1 dessertspoonful ; the yolks of two eggs. This is to be heated until it is lukewarm and slowly injected from two to three times a day after an enema of water. Pain should be combated with narcotics, such as codeine hydrochloride or codeine phosphate, in doses of from half to three-quarters of a grain. If the constipation requires treatment, enemata composed of warm water and soap, glycerine and olive or castor oil may be administered. For from four to seven days after the hemorrhage has occurred the patient must remain in bed on his back, and warm liquid food may be given, such as milk and limewater, or milk with a little tea and coffee, beef tea, bouillon, Koch's peptones, Leube's meat solution, emulsions made from the whites or the yolks of eggs, and the waters of Vichy, Vals, Krondorf, Lachingen, &c. Cocoa, chocolate, and wine should be avoided. In the second week after the hemorrhage the treatment may consist in the following :—Night and morning the patient should take Carlsbad water with 75 or 150 grains of artificial or natural Carlsbad salts. Compresses hot enough to redden the skin should be employed constantly. The preceding diet is continued, with nutritive enemata in case of great weakness. During the third and fourth weeks the patient may be placed on a sofa and allowed to move a little. The use of the Carlsbad water is to be continued for at least six weeks. The diet, in which milk still continues to be the principal article, may include biscuits, cakes, roast veal, meat pie, fish, shellfish, a little weak wine, and acid drinks. After the fourth week the following may be added :—Boiled potatoes, spinach, carrots, peas, beets, and red meats well cooked. For a year or more, raw or iced fruits, highly spiced food, and very hot or cold drinks should be avoided. (New York Medical Journal, April 4, 1896.)

TAPEWORM.—Treatment of.

Prospero (*Sperimentale*, Anno 49, No. 26) speaks strongly of the value of pelletierine (an alkaloid prepared from the pomegranate) in the treatment of the two larger varieties of tænia. He administers it in doses of 20 cgr. of the sulphate (Merck) with 25 cgr. of tannin in syrup, to be followed by an aperient next morning. Extract of male fern is unreliable in its effects, may be poisonous, and is not easy to get pure. For the ankylostoma thymol is the best vermifuge. In one of the author's cases proglottides of the tænia medio-canellata were voided through the mouth, and that without any severe vomiting. The tænia in this case presented an uncommon pathological appearance in that several of the proglottides were fenestrated in a scalariform fashion. This peculiarity has occasionally been observed before, and is supposed to be due to the action of the intestinal juices on parts of the worm where the external protective coating has been worn off. Pelletierine is costly, but therapeutically it gave the best results in the author's hands (British Medical Journal Epitome, November 30, 1895.)

AFFECTIONS OF URINARY AND GENERATIVE SYSTEMS.

ALBUMINURIA, CYCLICAL.

The term cyclical albuminuria was first used by Pavy (1885) to designate cases of recurring albuminuria. Osswald (*Ztschr. f. Klin. Med.*, Bd. xxvi., Hft. 1 and 2) has observed seven such cases over lengthened periods, and arrived at the conclusion that they were not of a functional character, but due to actual changes in the kidneys. This opinion is, however, not substantiated by any post-mortem evidence, as all the cases eventually recovered. It is founded on the presence of the general symptoms and the character of the urine. In all the cases reported, with one exception, the urine contained hyaline, fatty, and epithelial casts. The general symptoms present were anæmia, drowsiness, headache, palpitation of the heart, vertigo, epistaxis, gastro-intestinal catarrh, &c. It was noticed that after rest in the horizontal position the albumen disappeared from the urine, while active exercise had a marked effect in increasing the quantity. It is pointed out that the early morning urine may be free from albumen, while that passed during the day may contain it in considerable quantities. For the detection of small quantities of albumen he recommends acetic acid and ferro-cyanide of potassium.—*Centralblatt f. Inn. Med.*, 1895, No. 24. (Montreal Medical Journal, October, 1895.)

BLADDER, CALCULUS IN.

By W. H. Brown, F.R.C.S., Surgeon to the Leeds General Infirmary. A man, aged 22, was admitted under my care into the Leeds General Infirmary suffering from retention of urine. Ten months previously I operated upon him for vesical calculus, removing the stone by the suprapubic operation, and afterwards closing the bladder by a continuous silk suture. The case did well, union took place by first intention, and he left the Infirmary quite relieved from all symptoms. On examining for the cause of retention I found a calculus impacted in the prostatic portion of the urethra, and it was necessary to perform perineal section for its removal. The stone was about an inch and a half in length and somewhat cylindrical. On making a transverse section of the calculus a piece of silk suture, apparently part of the continuous suture used ten months before, was found forming the centre and nucleus of the calculus, the silk evidently having passed entirely through the mucous membrane of the bladder into its cavity. I think it right to publish this result as evidence of a possible disadvantage of using silk as a means of closing the bladder in such cases. (The Lancet, February 22, 1896, p. 479.)

BRIGHT'S DISEASE.—Fever in.

At the end of his paper, Dr. Stengel observes that fever may occur in the course of Bright's disease under three conditions:—(1) At the onset of acute nephritis as a result of the infection or intoxication causing the disease, or of the inflammatory or degenerative lesions in the kidney themselves; (2) in the course of acute or chronic Bright's disease as a result of various complications; and (3) in uræmia. The fever associated with uræmia may be sudden and pronounced, and associated with coma, delirium, or convulsions—eclamptic fever; or it may be more general, more lasting, less marked, and associated with typhoidal symptoms—slow uræmic fever. (American Journal of the Medical Sciences, November, 1895.)

CHANCRE, TREATMENT OF SOFT.

The *Centralblatt für Chirurgie* for January 25 contains abstracts of two articles on the treatment of chancroid. The first, by Neisser, was published in the *Berliner klinische Wochenschrift*, 1895, No. 36. Neisser says that for many years he has observed the best results from cauterisation with pure carbolic acid. The application, he says, is absolutely painless; it destroys the floor of the ulcer thoroughly (especially under overhanging borders of skin, it generally cleanses the sore very rapidly, and—a point on which the author lays special stress—it does not set up any artificial hard infiltration, as nitrate of silver does, to be subsequently mistaken for the induration of a syphilitic chancre. After the cauterisation he applies powdered iodoform and a 2 per cent. ointment of nitrate of silver. Neisser remarks that in four instances lately he has observed sores having the character of soft chancres, occurring three or four days after coitus, which did not heal under this treatment, but after a number of weeks became transformed into serpiginous syphilides; the soft chancre, he says, had become "provocative" of the starting-point of a tertiary syphilide, which was promptly cured with iodide of potassium. In such cases, says Neisser, one might readily be led to suppose that a reinfection had taken place; consequently mercury should not be given, for it cures primary, secondary, and tertiary manifestations alike, and thus makes the diagnosis impossible, while potassium iodide, which cures only tertiary affections, may be used with entire propriety. The other article, by Frank, which appeared in the succeeding number of the *Wochenschrift*, seems to have been called forth by Neisser's. Frank uses formalin for effecting the destruction of the ulcerative surface. He says that after twelve hours it appears dry, as if frozen, and that in six days this dry layer is shed and the sore is perfectly healed in one or two days more. Formalin, too, he states, does not give rise to any induration of the surrounding tissues, and the pain occasioned by its application is slight and of but a few seconds' duration. In a few cases he has observed that, after the shedding of the dried layer, the sore showed a moist, glistening surface, without any tendency to heal, but in these cases induration appeared subsequently, together with other signs of syphilitic infection. (New York Medical Journal, February 15, 1896.)

GONOCOCCUS.—Systemic Diffusion of.

Bordoni-Uffreduzzi (*Arch. Ital. de Biol.*, 1895) places on record the result of an experiment which demonstrates the gonococcus as the efficient factor in the production of gonorrhœal arthritis. In a case of multiple arthritis complicating gonorrhœa, he discovered in pus-cells taken from one of the affected joints organisms apparently identical with the gonococcus. Cultivations of the suspected organism were made on agar-agar and human blood serum, and an inoculation of the cultivation made with all due bacteriological precautions on to the urethral mucous membrane of a healthy young man who had never suffered from gonorrhœa and who had had no sexual connection for four months. The man, who was a consenting party to the experiment, underwent a typical attack of gonorrhœa, and the discharge was found to contain normal gonococci in abundance. (Intercolonial Quarterly Journal of Medicine and Surgery, November, 1895.)

MAMMARY ABSCESS.—Prevention of.

I have had some half-a-dozen cases during the last two years among the out-patients at the Westminster Hospital. In all instances the breasts were extremely distended, lactation having been recently interrupted; the skin over the breast was, however, still free from induration, so that the full ducts could all be felt. By the forcible expression of half to a pint of milk suppuration was prevented. In two of the cases nitrous oxide gas was given; the other patients bore the pressure without an anæsthetic. Taking the breast in the hollow of the hands and increasing the pressure very gradually and as uniformly as possible, there first oozed from the nipple a few drops of whey, then a small plug of curd, followed by a stream of milk. From each duct a plug of curd had to be driven before milk came. Finally, there issued streams of milk in many directions, as water from the rose of a gardener's watering-pot. Directly milk flows tension is relieved and further pressure does not cause so much pain. The amount of pressure required when the breast was so over-distended, as in the cases alluded to, indicated clearly that suction would have been quite inadequate, whilst the fact that each duct was plugged by curd showed why the milk was retained and how inevitable must have been decomposition and suppuration. In my last case a small areolar abscess had already formed and blocked the nipple by its pressure. The abscess was opened under nitrous oxide gas and nearly a pint of sweet milk expressed. No further suppuration ensued. Afterwards the women have been ordered to foment and to squeeze the breast frequently and to take iodide of potassium for a few days. (Mr. W. G. Spence, The Lancet, February 29, 1896.)

NEPHRALGIA.

Dr. Ralfe, before the Medical Society of London, dealt with the means of distinguishing between the forms of nephralgia calling for surgical and medical treatment respectively. He divided the latter into two subdivisions:—(1) The cases of reflex nerve disturbance giving rise to kidney pain, and (2) the aching kidney. The first variety was met with in association with valvular disease of the heart, especially when affecting the aortic valves, with thoracic, but more particularly abdominal, aneurisms, and pains reflected from the presence of hardened masses of scybala, this being most pronounced when the masses lay in the descending colon where it crossed the left kidney. The aching kidney was generally associated with abnormal mobility of the kidney, but it was also met with from other causes, as, for example, in the case of women wearing tight corsets who were addicted to active pursuits, the forcing down of the liver leading to pressure on the kidney. Another cause was an excess of the normal constituents of the kidney, such as undue acidity, or, as in a case mentioned, of marked azoturia. He also referred to a remarkable case of acute gouty paroxysms of the kidney recorded by Virchow in 1884. In diseases of the kidney without determinate kidney, such as blocking off the ureter with a tightly impacted calculus preventing the passage of symptomatic urine, the fact of the non-passage of morbid urine for some time excluded tuberculous disease, and progressive enlargement of the kidney would sooner or later point to hydro or pyonephrosis. When both kidneys were simultaneously obstructed, especially when unattended with colic or other marked symptom, it was often difficult to decide on the proper course to pursue. (British Medical Journal, February 29, 1896.)

NEPHRITIC COLIC.—Treatment of.

In the *Journal des practiciens* for January 11 there is an article on this subject in which the writer remarks that attacks of nephritic colic are but an episode in renal lithiasis. The danger of the disease rarely results from the pain, however severe it may be. The most painful attacks are not even those which are accompanied most frequently with the two great complications of nephritic colic, persistent anuria and uræmia. The other complications of lithiasis, renal calculus (with its accompanying hæmaturia, sufficient to cause anæmia, which simulates that of cancer), pyelitis, and pyelonephritis are also singularly graver even than attacks of nephritic colic. Rather frequently, also, these complications supervene without having been preceded by painful attacks. The abundant concretions may not, in reality, become lodged in the ureter, and consequently not cause acute attacks. But, if the painful attacks are not the fundamental element, they are so distressing that they become imperative indications for therapeutic measures. These indications, says the writer, have been summed up in a recent treatise on the treatment of diseases of the kidneys by M. Gaucher and M. Gallois. The treatment of nephritic colic is very nearly like that of pain in general. For example, plasters, to which laudanum has been added, are applied to the lumbar region, or, better still, to the abdominal wall. The heat acts as an antispasmodic and moderates the contractions of the ureter, and in this way favours the elimination of calculi. Extract of opium was given by Grisolle in doses of from three to six grains in twenty-four hours. If there is gastric intolerance, the opium or laudanum may be given in enemata. But the most rapid and the most convenient procedure for suppressing the pain is by injections of morphine. In this procedure, says the writer, the most careful precautions are necessary to prevent the subsequent abuse of this drug by the patients. The doses should be weak, and, although the intensity of the pain, which is the antidote of the opium, should bring about tolerance for morphine, it should not be forgotten that in nephritic colic the urinary secretion, and consequently the elimination of the morphine, is profoundly disturbed. Extract of belladonna may be employed in suppositories, alone or combined with an equal quantity of opium. Belladonna, however, says the writer, acts less on the peristaltic contractions of the ureter. If in biliary lithiasis there is sometimes reason to fear that suppression of the contractions of the gall-bladder arrests the progress of calculi in renal lithiasis the same danger does not exist, and there are no special indications for employing belladonna in preference to opium. Antipyrine taken by the mouth or by hypodermic injections may be useful. However, according to M. Robin, it increases the elimination of uric acid, and for this reason its employment should be restricted. Phenetidine in doses of three grains may be useful, also exalgine, although the latter causes vertigo. Ammonium valerianate, in doses of from 0·8 of a grain to eight grains, either in potions, pills, or enemata, may be used in slight attacks of nephritic colic. Chloral, especially in enemata, will occasionally be useful in cases of insomnia, and the following formula is recommended:—Decoction of marshmallow root, 4·75 ounces; Chloral hydrate, 45 grains; Sydenham's laudanum, 10 drops. This to be administered in a tepid enema. Inhalations of chloroform or of ether, says the writer, are especially useful and may be employed sparingly if the pains become too severe, but the physician himself should attend to the administration of these drugs. Finally, hot baths are often excellent means of arresting contractions of the ureter and of allaying the pain. (New York Medical Journal, February 1, 1896.)

PROSTATECTOMY, SUPRAPUBIC.—McGill's Operation.

Mr. H. Littlewood, F.R.C.S., of Leeds, relates a case in which, after the removal of large pieces of the prostate, there was a good deal of bleeding. He had recourse to the following expedient, which he thus describes:—The bladder was well washed out with some hot boracic acid solution, but this did not stop the bleeding, so one end of a long roll of cyanide gauze well sprinkled with iodoform was packed down to the prostate; the other end of this protruded through the vesical opening for about one inch and a half. The gauze practically filled the bladder and at once arrested the hemorrhage; it also acted as a drain for the urine. The upper and lower parts of the wound were now sutured with silkworm gut. The patient had a good night after the operation, and a fair quantity of urine drained away by the gauze. This latter was removed at the end of thirty-six hours, and was found to be thoroughly soaked with urine; there were some clots in the part which had been in contact with the torn prostate. No bleeding occurred after the removal of the gauze, and it was found to have soaked up all the urine in the bladder. The rapid arrest of hemorrhage in such cases becomes an important question. I cannot help thinking that the method adopted in this case may prove of equal value in those of a similar nature. In addition to the arrest of hemorrhage the roll of gauze acted as an admirable drain, leaving no urine in the bladder for decomposition, and in this way must have been a factor in clearing up the cystitis. (The Lancet, January 4, 1896.)

PROSTATIC HYPERTROPHY.—Castration for.

G. L., aged 65, consulted me on account of inability to micturate. For five years he has been troubled with irritation of the bladder, and for the past four years has never passed water without the aid of a catheter, which was required to be used every three hours. On examination I found the prostate much enlarged, and I could not pass a silver catheter of the ordinary shape, though a sound, with a short curved beak slipped easily into the bladder. I removed the testes on December 2, 1895. Sixteen days after he began to pass drops of urine with great straining. The quantity of urine gradually increased, the straining became less, and at the present time, six weeks after castration, he is quite comfortable. He has not used a catheter for three weeks; he passes a comparatively large quantity of water at a time, retains it for four or five hours, and has an unbroken night's rest.—(Dr. W. S. Byrne, Brisbane. Australian Medical Gazette, February 20, 1896.)

TUBERCULOSIS OF THE TESTICLE IN EARLIEST INFANCY.

Comby (*La Medicine Infantile*, 1895, xii., 678) presents two cases; in one, tuberculosis of the left epididymis began in a 14 months old child, which soon after developed a left cervical adenitis and a white swelling of the left ankle. The testicle when examined was hard and nodular, the swelling was indolent, and the skin was not adherent. Under proper hygiene all these affections practically disappeared in one year, but after about six months of comparative health a tubercular meningitis developed which resulted fatally. In the second case both testicles became suddenly affected in a rachitic boy four years old with a tubercular family history. Examination showed that there was a double epididymitis, probably old, with a subacute orchitis of recent origin. The scrotum was red and œdematous, and there was an effusion into the tunica vaginalis. The subsequent history was unknown. Note is also made of Julien's 20 cases; of these, 6 were less than a year old; 6 from one to two years of age, and 8 from two to three years. The left testicle was oftener affected than the right. (Pediatrics, March 15, 1896.)

GENERAL SURGERY, AND AFFECTIONS OF THE BONES, JOINTS, &c.

ASPHYXIA FROM FÆCAL VOMITING DURING ETHER NARCOSIS.

By C. Phelps, M.D. The case itself was one of simple strangulated inguinal hernia. The sac was neither very large nor very tense, but the initiatory general symptoms had been severe. Pain for twenty-four hours was intense, with vomiting of everything taken into the stomach, which prevented medication. After admission to St. Vincent's Hospital, at the end of that time, pain was so much lessened and vomiting having ceased, with no urgent local symptoms, that operation was deferred at the patient's request. Fæcal vomiting began the same evening and on the following day the operation was begun. Ether was administered, and relaxation and unconsciousness followed in the ordinary course. The sac had been dissected when the patient vomited a considerable amount of thin fæcal matter; respiration ceased instantaneously without a gasp even, and was never resumed. Every usual method of resuscitation was employed and tracheotomy done without delay, as it was evident from the first instant that any other resort was hopeless. The first expiration after the insertion of the tube was accompanied by free discharge of thin fæcal matter, and as this had not followed incision of the trachea, it seemed probable that it was extruded from a greater depth. A necropsy was not permitted. I have knowledge of another case in which asphyxiation followed the intrusion of fæcal matter into the respiratory tract during etherisation. I have since operated in a case of strangulated hernia in which general anæsthesia seemed a necessity, and I believe it can not always be avoided, but if fæcal vomiting has occurred such an experience as I have detailed is sufficient to give pause to any operator who is tempted to resort to general in place of local anæsthesia, even if it necessitates stopping at simple relief of strangulation in place of radical cure. (New York Medical Journal, March 21, 1896.)

CANCER IN NEW SOUTH WALES.

The following occurs at the end of Dr. Mullin's paper:—(1) Although New South Wales has one of the lowest death-rates in the world from cancer, the disease is undoubtedly increasing in the colony. (2) The cancer age is from 35 years upwards. (3) Cancer is slightly more prevalent among males than among females. The proportion is as 1·035 : 1. (4) The deaths from cancer occur chiefly among natives of Great Britain and

Germany. (5) Climate appears to have little or no effect on the production of the disease. (6) The stomach is the organ most affected in males, the uterus in females. The stomach is also largely affected in females. (7) Heredity is the chief cause of the production of cancer. Chronic irritation is an important factor, but its true significance (*i.e.*, whether it can originate cancer *per se*), is still a matter of dispute. Meat-eating, alcohol or tea drinking, tobacco-smoking, &c., are not primary causes of cancer. *Conclusion.*—Cancer is undoubtedly hereditary, but heredity alone does not cause the appearance of a malignant new growth. Some other cause must determine this. If, then, we know what are the secondary causes, or, more correctly, determining influences, we may seek to prevent their action on those who are the offspring of cancerous parents. The seeds of the disease are latent in some persons, and only require the agency of long-continued or chronic irritation, &c., to start development, and then the new growth increases in size, and the disease becomes established. (Australasian Medical Journal, January 20, 1896.)

CELLOIDIN.—Therapeutic Use of.

The following is taken from Dr. R. T. Williamson's article:—In the case of cuts, puncture wounds, excoriations, &c., especially of the hands, it forms a useful, dry, permanent coating and dressing. For the deep cracks and fissures in the skin of the hands, which are sometimes so troublesome in cold weather in persons whose circulation is feeble, celloidin is a most useful remedy. When painted over these fissures, it dries in a few minutes, and forms a coating which adheres for several days. When the celloidin becomes worn off, the fissures are healed. When a solution of celloidin is painted on the skin it dries quickly, and forms a thin but tough transparent elastic membrane, which adheres very firmly. No dressing is required, and hence, if applied to the hands, the patient is able to write and use the hands freely; also the parts can be washed as usual without the film of celloidin being injured, and sometimes five or six days elapse before a single coating of celloidin wears away from the hands. Celloidin may be used in all cases in which collodion has been employed. Though the action of the two substances is similar, celloidin is much more reliable; it adheres to the skin more firmly, and forms a more permanent and tenacious coating. The parts to which it is applied ought to be quite dry. If moist they ought to be dried with some antiseptic lint or wool; also the parts ought to be stretched slightly before the celloidin is applied, in order to counteract in some degree the contraction which occurs in the parts after the celloidin has become dry. The strength of the solution I have employed has been the same as that used in microscopical work — namely, 2 parts of celloidin dissolved in a mixture of 15 parts of absolute alcohol and 15 parts of pure ether (specific gravity, 720). It is important to use pure absolute ether of this specific gravity, and not the sulphuric ether which has a specific gravity of 735. If the latter be used the celloidin does not adhere to the skin so well. (British Medical Journal, April 18, 1896.)

COMPOUND FRACTURES OF THE LEG.—Treatment of.

Dr. Ashhurst's plan of cleansing the external surface is much the same as Dr. Tiffany recommends. He likes turpentine much better than ether to remove fatty matters from the skin, and after turpentine, uses soap and water, shaving the part if necessary and rubbing it moderately without giving pain to the patient, and then washes it thoroughly with a moderately strong antiseptic solution. For the deeper portions of the wound, after removing all loose fragments it is sufficient to wash them thoroughly with the warm antiseptic solution and secure drainage by rubber tubes or strips of sterilised gauze. As he has not enlarged the wound in the very extensive manner that Dr. Tiffany has described, he has also not resorted to the use of bone sutures as a matter of routine practice. He does not believe it either essential or desirable, and it is a good rule in surgery that what is not necessary should be avoided. Patients get firm union without the bones being sutured, and he cannot believe that it is necessary to use sutures in the large proportion of cases in which Dr. Tiffany tells us that he employs them, though, no doubt, after the very extensive incisions which Dr. Tiffany makes,—leaving the bones entirely loose,—there may arise a necessity for mechanically holding them together. Leaving the wound open, within certain limitations is good practice. There can be no greater mistake than to closely sew up the wound in a case of compound fracture, since the tension thus caused is almost sure to result in sloughing. If the laceration be very extensive, possibly a very few stitches may be used to hold its corners together, but it is commonly better simply to carry a strip of antiseptic plaster around the limb in a spiral direction, so as gently to hold the edges of the wound together, while not interfering with the swelling which inevitably follows. As regards the dressings, we do not in this city usually employ plaster of Paris in the early stages of compound fractures of the leg, but apply large antiseptic dressings which permit inspection of the wound as often as may be thought necessary, the limb then being placed in an ordinary fracture-box, and care being taken to keep the foot at a right angle with the leg and to prevent eversion of the knee. In cases where there is very great laceration, much benefit may be derived from the use of antiseptic irrigation, dressing the part loosely with antiseptic gauze after proper cleansing, and providing a reservoir at a proper height from which a weak antiseptic solution can be made to flow constantly over the wound, and continuing this irrigation until the dangers of the early stage have been passed and until the wound is granulating, when the ordinary dressings may be substituted. (From the discussion before the Surgical Section of the College of Physicians of Philadelphia. Annals of Surgery, April, 1896.)

FRACTURE, IMPACT, OF THE HEAD OF THE FEMUR.

By F. A. Southam, F.R.C.S. In *The Lancet* of November 17, 1894, I called attention to the unsatisfactory result which attends the usual method of treating impacted extra-capsular fracture of the neck of the femur. This consists in simply keeping the limb at rest, no attempt being made to correct the characteristic deformity—the shortening and eversion (rarely inversion) of the limb, always present in a greater or less degree—for fear that if the impaction is broken down the fracture will not unite. The result is that the patient remains with the limb shortened and everted, and consequently more or less crippled for the remainder of life. A case of this injury occurring in a male aged 27 years was described, where the fragments were loosened by forcibly breaking down the impaction under anæsthesia, and, the shortening and eversion having been corrected, perfect union took place without any deformity resulting. Three cases have since been treated according to the same method in the Manchester Royal Infirmary (two under my own care and one under my colleague, Mr. Whitehead) with satisfactory results, especially as regards the correction of the eversion, and as the patients were aged respectively 50, 65, and 75, a brief record of each may, perhaps, be interesting, for they illustrate the fact that advanced age is in itself apparently no bar to this procedure, the fracture in each instance readily uniting with an abundant formation of callus after the impaction had been broken down. [The cases are omitted here.] (The Lancet, December 21, 1895.)

MALIGNANT TUMOURS, PROGNOSIS OF.

The following occur among Dr. J. W. S. Gouley's conclusions:—The often reiterated dictum that "so long as a tumour is stationary and causes no inconvenience it should not be removed," is contrary to true principles of conservatism and is fraught with the greatest danger to sufferers. The ill-founded opinion that "extirpation of a quiescent malignant tumour only serves to stimulate the extension of „the disease," has prevented the early ablation and therefore the cure of many tumours, and is responsible for the great mortality due to procrastination. The early excision of malignant growths does not invariably increase the chances of cure, for there are cases of very small tumours which were promptly removed and which recurred so speedily and soon attained such dimensions as to be inoperable This is particularly the case with small-round-celled sarcomata and with multiple "melano-sarcomata." The early excision of certain sarcomata and carcinomata very frequently modifies favourably their prognosis, the period of immunity from recurrence of the disease being prolonged sometimes indefinitely. As soon and as often as a tumour recurs it should be excised. Cases illustrative of the good effects of this practice are rapidly increasing in number. The early excision of external benign tumours may often be regarded as prophylactic of malignant disease. Scarcely any tumour is too small to be excised. In the case of a malignant or of a suspectedly malignant tumour, it is imperative to excise not only the morbid growth, but also the apparently normal ambient connective tissue and lymph glands, to carry the dissection far beyond the diseased tissues, and to take measures likely to insure rapid cicatrisation of the wound. (New York Medical Journal, December 21, 1895.)

POTT'S DISEASE.

Dr. Lovell, in an article on the ambulatory treatment of this disease, thus writes on recumbency :—I am as far as any one from wishing to advocate unnecessary recumbency, but I wish to go on record as advocating, in general, during the acute stage of Pott's disease, recumbency on a frame for the greater part of the time, varied by short periods of going about protected by the most available brace or jacket. During the painful stage I believe that recumbency should be continuous. The beneficial effect of recumbency must be familiar to every orthopædic surgeon, who must often notice the improved appetite, the increase in flesh, and the diminished fever when a child with acute Pott's disease is put to bed. Pott's disease, it seems to me, is a very grave affection, and in advocating its treatment by recumbency, rather than by ambulatory measures, during the acute stage, I am speaking of what I believe to be the very best treatment. Other modes of treatment are no doubt excellent, but when one wishes to secure the very best result it seems to me that, having recognised that apparatus is intrinsically imperfect, and necessarily so, to accomplish the purpose for which it is intended, it is incumbent upon the surgeon either to insist upon this treatment by recumbency or to transfer the responsibility of ambulatory treatment to the parents. The use of apparatus, it seems to me, should be during the acute stage, to vary the monotony of recumbency. That recumbency should be carried out by having the child lie upon its back upon a frame. The addition of traction to the legs and head I believe to be of benefit, and that it hastens recovery by quieting muscular spasm and improving the position of the spine. I believe that it should be used in all cases of paralysis due to Pott's disease. With regard to apparatus, it seems to me that we should remember that apparatus is necessarily mechanically inefficient to solve the problem which it undertakes. If apparatus is used these points should be remembered:—The position of the superincumbent weight should be as far back as possible, and the higher the backward pull comes, whether a jacket or a brace is used, the less force is required. (Medical News, February 29, 1896.)

RICKETS.—Spontaneous Straightening of Curved Legs.

Bruns (*Beitr. Chir.*, vol. xvi., 1) gives results taken from observations in cases in Tübingen, from which he gives the following conclusions:—(1) That the greatest number of cases undergo spontaneous cure; (2) that the process of spontaneous cure lasts from two to four years; (3) if the curves are unchanged at the sixth year, spontaneous cure does not occur; (4) the chief aim of the treatment is to improve the general health. Of the number of cases observed 75 per cent. were cured, 15·3 per cent. were improved, and only 9·7 per cent. remained *in statu quo.* He considers that after the acute stage it is not detrimental for the children to be on their feet. (Boston Medical and Surgical Journal, March 19, 1896.)

SEPTICÆMIA.

In the treatment of septicæmia, it is of vital importance to regard all wounds as capable of conveying infection to the tissues; and if principles of prophylaxis were carefully carried out, there would be no such thing as septic infection. Careful immersion of every wound, however slight, in a $\frac{1}{1000}$ bichloride solution as soon as it is received, then drying the surface with a sterilised cloth, and coating the wound over with a protection of fresh, clean, collodion, is the best prophylactic measure in surgical therapeutics. However, when infection has taken place, free incision should at once be made, and a moist bichloride dressing applied. The injection of twenty to thirty minims of a $\frac{1}{1000}$ bichloride solution directly into the tissues immediately at the point of infection, will aid in destroying the septic germs. It is my rule after making the incisions, to keep the hand or part involved submerged in a solution of bichloride of mercury for at least half an hour after the incisions are made. Beyond this local treatment not much can be done except to support the patient in every way by careful nourishment and proper stimulation. When the lymphatic glands become engorged and are about to suppurate, they should be incised and treated as the original point of infection. (From Dr. John A. Wyeth's paper in the New York Polyclinic, March 15, 1896.)

TENDON SUTURE.—New Method.

By H. Littlewood, F.R.C.S. F. P., aged 36 years, a joiner, was admitted to the Leeds Infirmary with a traumatic aneurism of the right radial artery at the back of the wrist. There was also evidence that the three tendons of the extensor muscles of the thumb were divided about the same position. The aneurism was completely dissected out, and the radial artery above and below the sac ligatured. The three extensor tendons were found divided and separated for at least two inches; some silk sutures were found attached to the ends. It was now found impossible to bring the cut ends into apposition, so the following method was adopted:—A transverse incision was made half-way across each tendon about 1½ inch from the divided ends; from this point the tendons were split to within a short distance of their divided ends, the parts reflected down, and the free ends sutured by means of fine silk. In this way the interval was bridged over without any tension on the newly united parts. Having stopped all bleeding, the wound was sutured with silkworm gut, and the hand and forearm bandaged with a firm uniform wool dressing, the thumb being placed in the extended position. The dressing remained on nearly a month, the patient being treated as an out-patient after the first week. On removing the dressing all the wound had healed with the exception of a granulating surface about three-quarters of an inch in length. This was rather a long time in healing, but did so in about a month. The plan adopted in this case appears to offer in certain cases some advantages over other methods of tendon suture where the divided ends are separated for such a distance, and if it is successful when the tendons are so slender as those of the extensors of the thumb, it should be so in other cases where one has stouter tendons to deal with. The tendons must be manipulated with the greatest care, and of course the asepsis must be perfect. I attach great importance to the permanent dressing of wool, applied with a fair amount of uniform pressure. (British Medical Journal, February 15, 1896.)

VARICOSE VEINS.—Operative Treatment of.

Mr. Thewlall Thomas before the Liverpool Medical Society advocated a method of ligature and division of the internal saphena just below the saphenous opening as an improvement on the operation of Trendelenburg. In some cases where a large bunch of varices existed at the inner side of the knee he noticed that there was nearly always a deep communication which necessitated excision of a small bunch. Other cases could be cured by tying and cutting the external saphena at the lower end of the popliteal space. He read notes of seventeen cases, in all of which union occurred by first intention. When the limb is carefully bandaged after the operation, thrombosis does not appear to occur. In two of the cases a large varix was present at the saphenous opening; the ligature and division was performed immediately below this. It was astonishing to see old ulcers of the leg heal up so rapidly after the operation and not recur even in cases where the ulceration had lasted for many years. (Medical Press and Circular, April 29, 1896.)

AFFECTIONS OF THE SKIN, &c.

DIET IN SKIN DISEASE.

Dr. Walter G. Smith observes that a large number of our patients with affections of the skin are not obviously out of health, and are well able for their day's work in the world. We are too formal in our rules, and impose unnecessary and unmeaning restrictions. In my judgment, the main precept we need enjoin as a golden rule upon our patients suffering from diseases of the skin is moderation and temperance in all matters of eating and drinking, especially as regards alcohol; and we should seek to train the public to observe for themselves whether such and such an item of diet really agrees with them or not. With all this borne in mind, there is plenty of room for judicious advice tempered with common sense, and a hint or a suggestion is often better, although less showy, than the imposition of conventional rules. The latter course is, no doubt, sometimes requisite with the hypochondriac, the sensualist, or the careless, who will not listen to, or are incapable of understanding the still small voice of healthy instinct and of personal experience. (Dublin Journal of Medical Science, November, 1895.)

DRUG ERUPTIONS.

Dr. Fordyce (*Journ. Cut. and Gen.-Urin. Diseases*, December, 1895) reports cases of the nodular form, and of the rupia-like eruptions following the ingestion of iodide of potassium; also a case of erythema scarlatiniforme following the application of mercurial ointment to the pubic region; and, lastly, an erythematous eruption from the internal use of boric acid in a case of cystitis. In the nodular iodide eruption the lesions became larger than a man's fist, but did not suppurate. In the scarlatiniform eruption, following the application of mercurial ointment to the pubis, the eruption was universal and diffuse and itched slightly. There was no sore throat and no elevation of temperature. Within a week there was free desquamation. Dr. Fordyce also observed another case similarly produced, in which a diffuse erythema extended as high as the nipple line in front and behind, and as low as the knees, and on the inner aspect of the arms, whilst scattered patches of multiform erythema existed on the thorax, arms, and legs. The boric acid eruption followed the ingestion of thirty grains given daily for a month. The erythema was a multiform one of the trunk and other extremities, and was associated with conjunctivitis, photophobia, and very marked œdema of the upper lids. (British Journal of Dermatology, February, 1896.)

ERYTHEMA, MULTIFORM EXUDATIVE.

Dr. W. Osler speaks of visceral complications in this disease. Of eleven cases the visceral manifestations were as follows:—In all gastro-intestinal crises—colic, usually with vomiting and diarrhœa—five had acute nephritis, which in two cases was followed by general anasarca and death; hæmaturia was present in three cases; hemorrhage occurred from the bowels in three cases, from the stomach in two cases, from the lungs in two cases, from the nose in three cases; one patient had spongy and bleeding gums; two cases presented enlargement of the spleen; in one case there were recurring attacks of cough and bronchitis without fever; in one case there was a heart murmur. Five of the cases had swelling about and pain in the joints.

The skin lesions were polymorphic, ranging from simple purpura to extensive local œdema, and from urticaria in all grades and forms to large infiltrating hemorrhages of the skin and subcutaneous tissues. In individual cases the cutaneous eruptions were often of the most varied character. (The American Journal of the Medical Sciences, December, 1895.)

FLEA-BITES, ON.

Under this heading Mr. Jonathan Hutchinson (*Arch. of Surg., April, 1895*) contributes a suggestive article. He cites a number of cases in which nettle-rash, eczema, urticaria pigmentosa, or even urticaria bullosa, had been diagnosed, but in which the real cause was, in his opinion, nothing more than flea-bites. "It may be thought extraordinary," he remarks, "that patients who suffer from these chronic flea eruptions do not make the diagnosis for themselves." When the eruption has become chronic, they never think of such a simple cause. The whole skin is irritable, and the fresh spots receive little attention. Such persons say honestly that they never find fleas, the fact being that not suspecting them they are not looked for. The history of the mode of onset is important, and if worse in summer or winter, though fleas are not entirely inactive at the latter season. It is also worth noticing whether the new spots come out arranged in lines or irregular patterns, much as the stars are in the sky, in what he terms "constellation grouping." This kind is characteristic of the eruptions caused by lice, fleas, and in scabies. It may, however, be concealed when the eruption is so plentiful as to be almost universal. Mr. Hutchinson adds a note on the difficulty of convincing patients. Nothing can exceed the incredulity with which patients usually receive the diagnosis of flea-bites, and not infrequently the imputation is resented as if it were an insult. One lady absurdly asked him whether he thought it likely that she should have made a journey from Liverpool on account of flea-bites. In another instance he said to the child's mother, "I shall not tell you what the disease is, because you won't believe me." "I will believe anything you say," was her reply. "Well, then, unlikely as it may seem, I assure you that the whole eruption is caused by the bites of fleas." "Well, whatever it is, I am perfectly sure it is not that." A curious example of an allied cause is related, in which a man who had formerly suffered from syphilis developed tertiary lesions in situations where he had been bitten by mosquitoes. (Dr. Jamieson's Periscope, Edinburgh Medical Journal, September, 1895.)

IMPETIGO CONTAGIOSA AND ECTHYMA.

In a paper on the prevalence of germ dermatoses, Professor James C. White makes the following remarks:—Other very frequent forms of the condition well described by the French school by the title "staphylococcia purulenta cutanea" are the superficial dermatitis we call impetigo contagiosa and the deeper-seated inflammatory process, ecthyma. Although the lesions of each are distinctively typical, and the diseases are well defined in the main, yet we frequently meet with cases of extensive distribution where the two affections are intimately combined with each other and furunculosis, and in which it is impossible to state to which of them certain of the lesions should be ascribed. They are all caused by the presence of the pyogenic staphylococci, aureus and albus. Differences in the locality and the portion of the cutaneous tissues affected, in the age, temperament, and general condition of the patient will account in a measure, no doubt, for the diversity in the character of the lesions excited by the presence of these germs, but there must also be some as yet unrecognised specific quality in them by which the individuality of the respective affections is kept true, so that impetigo contagiosa, for example, almost invariably reproduces its characteristic lesions upon any part of the surface of the same individual by auto-inoculation, or when transferred to another child of the same family or a playmate. Its association in children with pediculosis capitis is so frequent that I never fail to examine the hair in every case of impetigo contagiosa of the face or hands. It scarcely needs mention that secondary forms of purulent processes, due to staphylococcia, are constantly observed in the course of many other dermatoses, but we must yet recognise the occurrence of some forms of pustulation and suppurative processes of the skin in which such germs are not found. (Boston Medical and Surgical Journal, January 9, 1896.)

ŒDEMA, PERSISTENT, AFTER ERYSIPELAS.

Dr. Pye-Smith, F.R.S., showed before the London Dermatological Society, a case affecting both eyelids after repeated attacks of Erysipelas. Whether the well-known cases of recurrent redness, swelling and pain, which are without fever and probably not contagious, are pathologically identical with the severe exanthem, with its characteristic micrococci and toxines, admits of question. In this case the recurrent attacks were of the more local and milder character. The first took place ten years ago, and œdema of the eyelids disappeared; the second was not followed by such complete recovery; and the third, which occurred eight months ago, left the present condition behind. The eyelids on both sides are so swollen as to interfere with vision, although the conjunctiva is unaffected; they are rose-red in colour, they do not pit on pressure, and when punctured no serum exudes. They closely resemble the subocular "bags" of myxœdema. There is no pain, and the patient, who is 21 years old, and otherwise in perfect health, suffers only from the great disfigurement and inconvenience. Treatment by collodion, by silver nitrate, by cold and compression, and by lead lotion has hitherto failed. Neither the exhibitor nor any member present had ever seen this common condition so severe and so persistent. (British Journal of Dermatology, January, 1896.)

PSORIASIS.—Thyroid Treatment of.

Dr. Thibierge has treated 11 cases of psoriasis in men with fresh thyroid. In three patients there was no alteration whatever—the results being *nil*. In the remaining eight there was a manifest improvement, which showed itself by a diminution in the extent and intensity of the redness, in the size, thickness, and colour of the scales, which became reduced, the large patches seeming to break up into a large number of small papular elements, more or less isolated, each covered with a small independent squame. Some disappeared, the seat of the former lesions being only indicated by a reddish-brown or brown spot, which gradually faded until the skin resumed its normal colour. This regression of the lesions only took place in a few of the psoriasic patches, and none of these eight cases could be considered as cured, despite the long duration of the treatment. From these researches, Mons. Thibierge concludes that the thyroid treatment does not deserve the title of a specific for psoriasis, that it fails, indeed, in the cure of that affection, and that it ought only to be tried where other methods of treatment have failed to bring about a good result. (British Journal of Dermatology, December, 1895.)

SCABIES.—Treatment of.

M. Jullien declared before the Société de Dermatology that he had successfully treated 300 cases of scabies with Peruvian balsam. This agent contains an essential oil, cinnameine, the vapours of which are extremely toxic for acarus. The patient rubs himself in the evening for a quarter of an hour with the Peruvian balsam, and lies all night in a shirt impregnated with the vapour of the acaricide; the next day he takes a soap bath. This treatment is not more expensive than the classical treatment, and is, moreover, particularly adapted to cases complicated with eczema or other skin affections in persons weakened from cardiac disease, in pregnant women, and in infants. (Medical Press and Circular, April 22, 1896.)

AFFECTIONS OF THE EYE, EAR, THROAT, &c.

EAR AFFECTIONS IN INFLUENZA.

Dr. F. C. Heath makes the following remarks in his paper on the sequelæ of influenza:—The ear affections arising from *la grippe* are so common that any practitioner with much experience in recent epidemics must have observed them. Dench calls attention to the effects of influenza on the auditory nerve, but the most frequent lesion is suppurative inflammation of the middle ear—probably, in the majority of instances, secondary to the throat affection. This inflammation is characterised by great severity and persistency, the pain being usually intense and hard to control, the suppuration prolonged, and hearing much impaired; there is strong tendency to the formation of mastoid abscess with all its dangers, in which case Politzer advises early operation. In the recent epidemic of influenza quite a number of these cases came under my charge. The mastoid was undoubtedly involved in a number of them, but fortunately all recovered without operation, although several were visited more than once with a view to immediate operation should such be required. The hearing in one case was so profoundly affected that we had to communicate mainly by signs. As a rule the pain was intense and the general symptoms severe. In several cases there was considerable swelling over the mastoid, and in a few, also, at other points about the ear, especially in front; the mastoid was tender in a still larger proportion. There was insomnia in some, stupor and other cerebral symptoms in others. The treatment employed was hot salt-water syringing, with anodynes and febrifuges as indicated, together with local use of iodine, blood-letting—Bacon's artificial leech being employed to the tragus and mastoid—and potassium iodide pushed according to the suggestion of my friend Dr. Cline. Occasionally it was necessary to perform a paracentesis of the drum-membrane, and in one instance a few incisions were made in the floor of the auditory canal. Hot applications were frequently used to the mastoid, and were in one case replaced by an improvised Leiter coil for cold water. The results were all very satisfactory. (Medical Age, January 10, 1896.)

GRANULAR OPHTHALMIA TREATED BY LIQUID VASELINE AND IODINE.

Dr. E. A. Neznamoff, of Kharkoff, has employed the following treatment in cases of granular eyelids:—It consists in painting the mucous membrane of the eyelids with a solution of pure iodine, mixed with liquid vaseline, which is also called "oil of vaseline" (*oleum petrolei*), twice daily. In chronic forms, as cicatrices from granular ophthalmia with pannus, infiltrations, and superficial opacities of the cornea, he employs liquid vaseline containing ½ to 1 per cent. of iodine. By the third or fourth day a great improvement is visible; at the end of two or three weeks the vessels of the pannus become obliterated, the effusions are re-absorbed, the cornea regains its transparency, the palpebral mucous membrane becomes smoother and softer, and in consequence the sight improves. The so-called "fleshy pannus" (*pannus crassus*) will yield with great rapidity to applications of oil of vaseline containing 1½ per cent. of iodine. Thus in a case where two-thirds of both corneæ were covered by a pannus at least half-a-millimetre in thickness, after three weeks of treatment the left eye only presented a slight and altogether superficial opacity, whilst on the right eye there was simply a very thin pannus. In cases of recent trachoma, both of the granular and papillary form, the quantity of iodine should be increased to 3 and even 5 per cent. As oil of vaseline does not dissolve more than 1½ per cent., a little sulphuric ether, or, better still, rectified petroleum, should be added in order to obtain a more concentrated solution of iodine. Painting the palpebral conjunctiva with these strong solutions generally causes a good deal of discomfort; the mucous membrane becomes red, the eyes water, and the patient suffers acute pain, which is, however, but of short duration. After four or five applications a catarrhal condition ensues, accompanied by copious secretion, congestion, and slight tumefaction of the mucous membrane. At this stage, in addition to the application of iodine twice or thrice daily, Dr. Neznamoff lightly cauterises the conjunctiva with a solution of nitrate of silver of the strength of 2 per cent., washing the eye immediately afterwards. In addition to this he lances the largest granulations and expresses their contents. In cases of recent trachoma with abundant secretion at the outset, before employing the strong solutions of iodine, it is advisable to apply glycerine mixed with ½ per cent. of iodine in order to arrest the secretion. The excellent results of Dr. Neznamoff's plan have been confirmed by Dr. L. L. Hirschmann, professor of ophthalmology in Kharkoff. He has found it useful in cases of granular ophthalmia and also in other ocular diseases. (The Lancet, February 8, 1896.)

NOSE AND THROAT.—Digital Examination of.

Dr. S. Kohn thought the general practitioner had neglected digital examination in diseases of the throat and nose, and he wished to emphasise its importance. He advised supplementing instrumental examination by a careful palpation of the parts, after thoroughly disinfecting the hand, introducing the index finger to the posterior pharyngeal wall, cautiously palpating the tonsils and perhaps the nasopharyngeal space and upper larynx, and feeling certain changes which the eye could not see. The change visible to the eye was a change in conformation, such as that of enlarged tonsils and that of tuberculous swelling of the epiglottis or of the arytænoid cartilages, while the index finger could feel whether the tonsil was made up of dense organised connective tissue or of soft granulation tissue, and this would enlighten one as to the method of abscission to be followed, whether with the guillotine or with the snare, as in the hard connective-tissue tonsil the danger from hemorrhage following the operation with the amygdalotome was greater than that following the use of the cold snare or the cautery loop. Again, the eye detected a swelling running along the border of the posterior faucial pillar; the index finger would feel that this swelling was hard and unyielding, pointing to the diagnosis of possible incipient malignant disease; and implication of the submaxillary lymphatics, discoverable by palpation, made the diagnosis a certainty. While a tense, glazed, protuberant swelling seen upon the posterior pharyngeal wall of a child led to the supposition of retro-pharyngeal abscess, the detection of fluctuation by the index finger left no room for doubt as to the diagnosis. While cleanliness was the first requisite to a proper digital examination of the throat, the second was gentleness of manipulation, and the third a thorough knowledge of the normal topography and feel of the parts. He spoke of its use in adenoid vegetations, where often a rhinoscopic examination was impossible. If the mass was soft, pulpy, and easily crushed, it could perhaps be removed by crushing and scraping with the finger nail at the time of examination. Digital examination was invaluable in detecting malignant disease of the throat, as careful palpation with the index finger would reveal induration, raising the question of malignancy, which would be settled by a microscopic examination. In follicular amygdalitis it was of great value. Foreign bodies were often felt by the finger when they could not be seen by the eye. In diseases of the nose the tactile sense had not such a wide field of application. (New York Medical Journal, January 4, 1896.)

TUBERCLE OF MIDDLE EAR.

At a meeting of the Manchester Medical Society (*British Medical Journal*, December 21, 1895), held on December 4, 1895, Milligan emphasised the following points as regards diagnosis:—Insidious onset unaccompanied by pain, the presence of a perforation in the centre of a pale œdematous membrane, enlargement of cervical glands, and early facial paralysis. To obtain positive evidence of the presence of tubercle, if a mastoid operation is necessary, he inoculates guinea-pigs subcutaneously with scrapings of the diseased bone. Evidence of the tuberculous nature of the disease being present in the liver, glands, &c., of these animals when they are killed in from two to five weeks from the time of inoculation. He thought the prognosis was extremely grave in young children, and inisted on thorough removal of all diseased parts. (Pediatrics, February 1, 1896.)

OBSTETRICS AND GYNÆCOLOGY.

ABORTION.—Treatment of.

The treatment adopted by Dr. J. Jacub (*Monatsschr, f. Geb. u. Gyn.*, September, 1895) is as follows:—(1) In threatened abortion rest in bed, opium with extr. fl. vib. prunifol.

(2) When considerable bleeding has occurred, the cervix being still closed, packing of the vagina with antiseptic gauze or wool. (3) When bleeding occurs, and the cervix is dilated sufficiently to admit one finger, separate the ovum and remove it, and follow with antiseptic douching of uterus and vagina. (4) When the cervix will not admit one finger, and the bleeding is very severe, dilate carefully with the finger and proceed as in 3. (5) In many cases the expulsion of the ovum can be left to nature. (6) Ergot to be given daily for a week after an abortion. (7) The employment of a sharp curette in the treatment of abortions is in most cases unnecessary, and cannot be used without risk. (Dr. Webster's abstract in British Gynæcological Journal, November, 1895.)

ALEXANDER'S OPERATION.

The following is taken from Dr. Paul F. Mundé's paper:—My riper experience, which now comprises 97 cases, confirms my previous observations and makes me a stronger believer than ever in the value of Alexander's operation for properly selected cases. The indications are based on clearly drawn lines, and are briefly stated, the following:—(1) Retro-version or retroflexion of the uterus of long standing where pessaries either do not maintain the uterus in position, are not retained, or cause pain. (2) Retroversion or retroflexion of long standing, associated with relaxation of the uterine supports (ligaments, pelvic floor, and vaginal walls) and consequent greater or lesser *decensus uteri.* (3) *Prolapsus uteri et vaginæ* where the Alexander's operation is preceded at the same sitting by trachelorrhaphy or amputation of the cervix, and is followed by anterior and posterior colporrhaphy and perineorrhaphy. (4) The desire of the patient to be cured of her displacement, a wish which no pessary or other non-operative treatment can fulfil. (5) The necessity for keeping the uterus in its normal anteverted and elevated position after the adherent fundus uteri and appendages have been loosened and restored to their normal mobility, either by bimanual tearing of the adhesions or by peeling the organs loose with the fingers through an incision in the posterior vaginal couch and Douglas' *cul-de-sac.* The counter-indication for Alexander's operation are:—(1) Adhesion of the uterus or appendages. This is an absolute and positive counter-indication for Alexander's operation. (2) The possibility of retaining the uterus and appendages in a normal position and of making the patient perfectly comfortable with a pessary, unless, of course, the patient insists on a cure, as already mentioned. (3) *Prolapsus uteri et vaginæ* of the second or third degree—that is, with the cervix down to or out of the vaginal orifice—unless the plastic operations referred to (anterior and posterior colporrhaphy and perineorrhaphy, and reduction of the weight of the uterus by trachelorrhaphy or amputation of the cervix) are performed at the same sitting. (Medical News, March 14, 1896.)

DECIDUOMA MALIGNUM.

By Carl Ruge (*Ztschr. f. Geb. u. Gyn.*, Bd. xxxiii., Hft. 1). At the outset attention is called to the clinical and anatomical features of the disease as something definite and characteristic. Clinically, it is a malignant disease, closely connected with an abortion or a normal labour; hemorrhages excite the suspicion of retention of portions of placenta or of membranes; removal of fragments of tissues from the uterus is followed by temporary arrest of the hemorrhage; in place of bleeding there is a watery, purulent, or offensive discharge from the uterus; and sooner or later hemorrhage recurs. The round of incidents from the time of the abortion or labour, may be repeated, while the patient is becoming intensely anæmic and feeble; the case then presents all the characters of advanced malignant new growth of the uterus. There is a rapid development of metastases in the vagina, the lungs, and other organs, and the fatal termination is rapidly reached. Anatomically, the characteristic fact is that the matrix of the neoplasm is in the decidua. It is a malignant growth of the connective tissue of its matrix, and, therefore, it must be looked upon as a sarcomatous degeneration. The disease described by Gottschalk in his various papers published during the last three or four years is clinically identical with Ruge's form, but Gottschalk alleges that the point of origin is the stroma of the chorionic villi. "The elements of the stroma change into a thick layer of large polymorphous cells, resembling the cells of the decidua. This chorio-deciduoma malignum is also a sarcomatous growth." It is of fœtal origin, whereas deciduoma malignum, according to Ruge, is maternal. Ruge applies to some of the published cases the criterion of direct connection with abortion or full term parturition, and excludes a considerable proportion of them from the category of decidual neoplasms. The details of many cases are given with the object of analysing the clinical and pathological observations made especially by Gottschalk. Ruge's terribly tedious paper is, throughout, controversial, and adds little to our knowledge, except the author's interpretation of certain points in the histology of the placenta at various stages, and of some pathological changes which may occur in it. Its value lies in its being an exposition of one side in the controversy as to the nature of the malignant disease, and much of the value it might have had disappears by the author's approval of Marchand's work, and cordial acceptance of his conclusions. (Medical Chronicle, January, 1896, p. 289.)

EXTRA-UTERINE FŒTATION.—Diagnosis of. The following is taken from Mr. Harrison Cripps' paper :— When the sac bursts into the peritoneum, pain, though severe, is not so intense as when the bleeding is into the broad ligament. On the other hand, the general symptoms are graver, doubtless due to a larger amount of blood being lost. Indeed, the hemorrhage may be so profuse that within an hour or two of the accident the patient may be pulseless and almost moribund, but as a rule she will rally to a certain extent from the immediate effects of the first loss of blood, thus affording time for surgical interference, which, to be effective, must be prompt, the cases being almost invariably fatal if the bleeding is not arrested by abdominal section. The general symptoms of shock, such as is produced by loss of blood from any part, are most marked. The abdomen is tender; it is resonant in front, and often there is considerable impairment of resonance, or even dulness in the flanks. Careful palpation of the abdomen fails to detect any obvious tumour. On making a vaginal examination the uterus is movable and in the natural position. No tumour can be felt, but there may be some fulness in Douglas's pouch conveying a doughy feeling to the finger, doubtless due to blood-clot. Examination of the rectum shows no stricture of the bowel. If the rupture has occurred between the layers of the broad ligament the sudden onset of the symptoms will be the same, but the pain seems to be more intense and lasting, with a well-marked paroxysmal character, described by patients as like labour pains. The patient generally shows signs of hemorrhage, though in a much less degree than in the intraperitoneal cases. On deep abdominal palpation a tumour, feeling hard, may be found in one or other side rising out of the pelvis, though not to a great extent. Sometimes the swelling does not rise sufficiently to be obvious on abdominal examination. It is on examining by the vagina, however, that the more important points in the differential diagnosis are to be obtained, for in intraperitoneal rupture there is nothing abnormal to be felt, save perhaps the puffy swelling already alluded to in Douglas's pouch, whereas in the broad ligament variety a hard swelling can be felt on one or other side of the cervix, partly filling the pelvic cavity. The tumour is firmly fixed, while the uterus pushed to one side appears to form the inner boundary of the swelling and is attached to it. On examining the rectum a marked constriction is often present at about four inches from the anus ; this is due to the rectal fascia, which passes round the bowel and is continuous with some of the broad ligament fibres. Hence if the broad ligament is pulled upon, the rectal fascia becomes drawn tighter, producing a ring-like stricture. (British Medical Journal, March 28, 1896.)

FACE PRESENTATIONS.—Cause of.

In an exhaustive monograph Dr. Roberto Muggia discusses the various alleged etiological factors in face cases, and gives in a tabular form the details of 41 such labours. The frequency with which these confinements occurred was once in 137 cases (41 in 5,644 labours), and of the 41 instances met with, in 25 the chin of the child was to the back and right side, in 2 it was to the front and left, in 2 to the back and left, in 2 to the front and right, and in 5 it lay transversely and to the left. Amongst the fœtal causes for the presentation found by Muggia were fœtal struma, coiling of the cord round the neck, dolicocephaly, absence of the cranial vault, small size of the fœtus, oblique position of the fœtus, maceration, increase of the biparietal diameter, abnormal size of the head, abnormal shortness of the neck, and the female sex. The maternal causes included repeated pregnancy, hydramnios, uterine obliquity, uterine tumours, low implantation of the placenta, and pelvic contraction. In addition to the causes given in this already long list the author adds those that have been advanced by other writers, but which he has been unable to confirm. It would seem that the fœtal causes are the more important, and heredity may even come into play. A practical conclusion is that, if a face case evidently represents the expression of given anatomical conditions, maternal and fœtal, the intervention of the obstetrician is in the great majority of cases unnecessary. The genu-pectoral position of the patient in labour is advisable in order to aid the rotation of the chin. All external and internal manual interference should be undertaken only in definitely ascertained cases and under certain circumstances, for the fœtus which presents by the face will often come safer thus into the world than if its presentation is modified. In only one of the author's cases was an asphyxiated infant not resuscitated. Of course, it would be absurd to say that a face case is more favourable than a vertex; at the same time, in the circumstances, presentation by the face may be a natural way of escape.—*Annali di Ostetricia*, September and October, 1895. (From Dr. Ballantyne's Periscope, Edinburgh Medical Journal, February, 1896.)

FIBROID.—Abdominal Hysterectomy for.

A. Martin (*Berl. klin. Woch.*, 1895, No. 29) reviews the history of total abdominal extirpation of the fibroid uterus, giving due credit to the pioneer work of American surgeons, and describes his own technique, which is briefly as follows:—The vagina is thoroughly cleansed twenty-four hours before operation, and is tamponed with sublimated gauze. Immediately beforehand it is scrubbed with soap and water, alcohol, and sublimate solution. The Trendelenburg posture is not used, although the writer has no decided objection to it. After opening the abdomen the growth is lifted out *in toto*, traction being assisted by pressure exerted *per vaginam* if necessary. In some cases it may only be possible after removing some of the smaller tumours. The broad ligaments are ligated in the usual manner with juniper-catgut; one side being completely secured before the opposite ligament is ligated. A Richelôt's clamp is applied to the stumps outside of the ligatures. The uterus is then detached as low as the vaginal attachment, and the vagina is opened posteriorly, preferably by boring into it with the end of a dressing-forceps; the edges of the vaginal wall and the peritoneum of Douglas's Pouch are then united by interrupted sutures. The bases of the broad ligaments are sutured to the lateral walls of the vagina in the same manner, the cervix meanwhile being drawn upward with a volsella. Finally, the bladder is dissected off from below, the sutures, which have been previously passed through the anterior wall of the vagina and vesico-uterine fold, are tied, and the uterus is removed. The ligatures, which are left long, are drawn down into the vagina and the peritoneal flaps are united. Drainage is not employed. The abdominal wound is then closed. The operation is often completed by the writer in thirty minutes or less, and the patient's convalescence is uneventful, so that they are usually discharged at the end of two weeks. In 204 cases of hysterectomy the ureter was tied twice with a fatal result, but the bladder was injured in only two instances, due, the writer thinks, to the fact that he separates it from below upwards before opening the anterior vaginal fornix, the procedure being materially assisted by maintaining upward traction on the uterus. Hemorrhage is entirely avoided by ligating all the vessels before they are divided. In 43 cases, up to 1893, in which the peritoneum was not closed, the mortality was 30·3 per cent.; in 54, in which it was closed, 9·5 per cent. In 81 cases since that time, in which the above-described technique was adopted, the mortality was 7·4 per cent. (The American Journal of the Medical Sciences, January, 1896.)

GONORRHŒAL TUBAL DISEASE.—Palliative Treatment of.

Dr. Pryor read a paper on this subject before the New York Academy of Medicine (abstract in *New York Medical Journal*, November, 1895). He said that in suppurative disease it was his practice to remove the uterine appendages and also the uterus, but while this was an ideal method on account of its completeness and thoroughness, the removal of the uterus was often followed by neurasthenia. The surgeon in this field was often compelled to do incomplete work in order to preserve to the woman certain physiological states. He had operated in seventeen cases in first attacks of acute salpingitis. The inflammatory process in these tubes had seemed to be almost entirely confined to the wall of the tube. He would assert positively that a proper and early resort to curettage often brought about a cure. All but three of his cases had recovered completely, and had menstruated normally after the operation. In some of those acute cases the greatest relief was obtained from curettage, followed up by a breaking up of adhesions through a crescentic incision in the posterior *cul-de-sac*, and the insertion of a Mikulicz dressing. The least could be done for cases of recurrent salpingitis, in which the tubes were, as a rule, much congested, and the fimbræ matted together. The uterus was usually dense and fibrous, and curettage had but little effect on the tubal disease. In hydrosalpinx and pyosalpinx the uterus should be curetted, the *cul-de-sac* opened, and, without disturbing the matted viscera, the tubes punctured and their contents evacuated. The tubes should then be packed with gauze. Where it was possible to protect these women from reinfection, he believed that a permanent cure could be secured in 80 per cent. of the cases The foregoing methods were intended for the general practitioner, who, without resorting to the severer surgical operations, could do a great deal more for these unfortunates than had been formerly accomplished by the old let-alone method of treatment. (Glasgow Medical Journal, April, 1896.)

HYSTERECTOMY OF PREGNANT UTERUS.

Dr. Galabin showed before the Obstetrical Society a tumour comprising the uterus at 4½ months of pregnancy. The patient from whom it was removed presented two abdominal tumours on the right and left sides respectively. The mass on the right side was double the size of the other, it was fluctuating and gave a fluid thrill. The diagnosis for a time remained in suspense, but in the course of three weeks the tumour on the right side doubled in size. Even then it was difficult to decide whether it was ovarian or uterine, but circumstances seemed to point to its being ovarian. A loud souffle could be heard over the tumour on the left side and on one occasion it was also heard over the right tumour. It was decided to operate, and hysterectomy was therefore performed with intra-peritoneal treatment of the stump. It proved to be a dermoid cyst of the uterus. There was no difficulty in respect of hemorrhage and the patient recovered without a bad symptom, the temperature never going higher than 100° F. (Medical Press and Circular, November 13, 1895.)

INTRA-UTERINE MEDICATION.

The following is taken from Mr. Burton's Gynæcological Notes:—

A very lengthened discussion on this subject took place at the Berlin Medical Society in October and November of last year. The discussion was introduced by Prof. Olshausen. In speaking of uterine colic, caused by intra-uterine injection, he says, the remedies that have been proposed for avoidance of the evil have not been successful, which is arguing that the evil is unavoidably associated with such injections. It would seem the most obvious thing in the world not to make injections under such circumstances, and they can very well be dispensed with. In regard to artificial dilatation of the uterus, he says there are two methods that deserve to be in use—that by laminaria and that by packing with iodoform or sterilised gauze. "All other methods," he says, "are practically abandoned, and are only suitable for rare cases. Dilatation by blunt instruments should in the great majority of cases not be employed." All this—and I say it with great respect to Prof. Olshausen's deservedly high authority—is quite contrary to our own practice. Laminaria tents have been practically abandoned, because they are dirty, and take up too much time, entailing two or three distinct seances where only one is required, and cannot be altogether freed from risk of sepsis, whilst gradual dilatation by packing has never come into use—and yet we dilate with great frequency with blunt instruments, and with despatch, and up to the present I have never seen any occasion to think ill of the practice. It is true we have discarded Hegar's vulcanite bougies, for they are roughly made and the graduation is too coarse; but we have had metallic ones made, better finished, and with finer graduation, in the place of Hegar's, and with them dilatation is easy, speedy, and safe, and can be carried, with care and a little patience, to almost any limit. "On the whole," Prof. Olshausen says, the "method of dilating by gauze is the best and most suitable." He then goes on to say he has frequently heard of colleagues who have been unfortunate with this form of dilatation; that such cases are not unfrequently recorded in literature; and lastly, he says he has seen four such cases himself. This is a very serious indictment, and one that could not be justly charged against rapid dilatation by well-made and finely-graduated bougies, whilst dilatation by means of laminaria tents is "undoubtedly more dangerous" than that by packing. "It is difficult to make it aseptic, even after the method of B. Schultze." Enough has been said to condemn both methods, when a much safer one is at hand. Curettement, although a very valuable and in many cases an indispensable form of treatment, is at the same time very dangerous; and he thinks it is far too extensively employed. He very properly finds fault with the steel curette; it should be pliable, he says, and curved one way or the other, according as it is applied to the anterior or posterior uterine wall. As a measure of his estimate of the risk of curettement in the hands of the unpractised, he says, it is better for one not specially skilled to undertake an amputation than a curettement. In curettement there was not much danger of getting into a Fallopian tube. Liq. ferr.-perchl. was absolutely unusable and dangerous. On anatomical grounds, curettement of the cervix was useless. (Liverpool Medical Chirurgical Journal, January, 1896.)

MEASLES AND PREGNANCY.

Lefour (*Revue Obstét. Internat.*, January 11, 1896) states that in December, 1894, a case of measles broke out in a dairy farm. On December 23 the cook at the neighbouring country house took the disease. Her mistress, who was pregnant, left home and did not return till a month later. Measles still existed in the neighbourhood. The mistress was seized with coryza. The temperature went up to 102° F. for a few days, at the end of which time only the measles rash appeared. Pains set in at once. A small child was rapidly delivered without any assistance. When a few days old the child did not weigh quite 4½ lbs. At birth this child showed a distinct measles rash. For several days it had to be fed artificially. The temperature oscillated in the case of the mother between 101° and 104. Convalescence was rapid. No local trouble was experienced. Labour had occurred, it was accurately ascertained, at the eighth month; when pains and delivery set in the temperature was not over 102°. The fœtus must have been rapidly infected, as it was born with the rash on the day that the rash appeared on the mother's skin. Rivière observed measles appear on the eighth day after labour at term. Temperature rose to 105°. The fœtus had been taken ill on the fifth day. Mother and child recovered without complications. Hirigoyen believes that in Rivière's case the mother was in the incubation stage of measles when delivered, and that the fœtus was infected before birth. Chambrellent agrees with Hirigoyen, since eruptive fevers develop far more slowly in the fœtus than in the mother. (British Medical Journal Epitome, February 15, 1896.)

MEMBRANES DISCHARGED FROM THE UTERUS.

Dr. Emil Ries, at the end of his paper, points out the main symptoms by which we are enabled to make a differential diagnosis between these different membranes. The history of the case generally gives some valuable indications as to the nature of the membranes passed, especially so in cases of membranous dysmenorrhœa, where a history of more or less regularly repeated discharge of membranes is highly significant. By microscopic examination two kinds of membranes can be diagnosed without any difficulty, the membranes consisting of vaginal epithelium and the blood-clots. For the rest of the membranes the main question to be answered is whether there is pregnancy or not. If we find chorionic villi the diagnosis of intra-uterine pregnancy can be given with absolute certainty. If we find the membranes composed of parts of the uterine mucosa with well-preserved glands and epithelium without any decidual cells, the diagnosis of dysmenorrhœa membranacea may be safely pronounced. The main difficulty arises if we find decidua cells in the membranes. Some authors assume that decidua cells are no proof of the existence of a pregnancy, because decidua cells have occasionally been observed in cases of simple endometritis. But it seems to me that there exists a wide difference between the occurrence of a few decidua cells in an otherwise normal interstitial tissue and the composition of a whole membrane by decidua cells. But if we observe that a membrane passed from the uterus is totally or largely composed of decidual cells, if we find the whole specimen like those above described as decidual or para-decidual membranes, I believe we need not apprehend a mistake if we give a diagnosis of pregnancy. To decide whether this pregnancy is intra- or extra-uterine it is of the greatest help to have the whole membrane for examination. Their size, the thickness, the number of the openings at the corners of the sacs give most important clues. Finally, the aspect of all the membranes above described can be much changed by degeneration or hemorrhages and round-cell infiltration, so that eventually an exact diagnosis is impossible. In making a diagnosis from the descriptions above given it must always be borne in mind that absence of a symptom is of very inferior value to positive observation. (The Journal of the American Medical Association, March 21, 1896.)

MENSTRUATION AND IMPREGNATION.

Dr. Leonard Remfrey arrives at the following conclusions:—(1) Of suckling women, 57 per cent. only have absolute amenorrhœa; (2) 43 per cent. menstruate more or less, but 26 per cent. have absolute regularity; (3) impregnation does not take place so readily during lactation as at other times, but this is not true to such an extent as has been imagined; (4) if absolute amenorrhœa is present during lactation, the chances of impregnation occurring are only 6 out of 100; (5) if menstruation occurs during lactation the chances of impregnation are 60 in 100; (6) the more regular a woman is during lactation, the more likely is she to become pregnant; (7) during a menstruating lactation the changes in the uterus are presumably similar to those connected with the ordinary monthly periods, and the mucous membrane forms a nidus for the ovum; (8) In the woman who does not suckle at all the menses appear, as a rule, some time in the first six weeks after delivery. (Transactions of the Obstetrical Society, 1896, p. 26.)

OSTEOMALACIA.—Symptoms of.

The following is taken from Dr. James Ritchie's paper:—The earliest symptom is usually pain in the sacrum, pelvic bones, or spinal column, because the bones in these regions are usually first affected. The pain is more or less constant, aggravated by pressure and by movement. Then follows difficulty in walking, particularly difficulty in flexing the thighs on the trunk, which prevents the feet from being properly raised from the ground, and leads to an awkward rolling or waddling gait. As it advances the bones may bend, or they may be fractured. The bending of the bones is due to the removal of the earthy salts, and the changes in shape are governed by the ordinary laws of mechanics. The pelvis is usually first affected, and in consequence of the pressure through the spinal column on the sacrum above, and the resistance on the acetabula below, these three points are approximated, the shape of the pelvis tends to become triangular, the rami of the pubes more or less parallel, and it becomes beaked. In a considerable proportion of cases the outlet is much diminished in size, the tuberosities of the ischium are not only approximated, but they are pressed backwards towards the coccyx, so that an examining finger enters the outlet with difficulty. In consequence of the distortions the origins and insertions of the muscles which act on the thighs are approximated, and their ability to act is therefore diminished. Next in order, the spinal column is affected; it is liable to become twisted in a variety of ways, the height of the patient is thereby diminished, and the thorax is deformed. The ribs also may be involved, in consequence of which further deformity of the chest results, its sides are forced in, sometimes hollowed by the weight of the arms, the sternum is thrown forward. The angles of the scapulæ become incurved. Later the long bones may be involved and distorted in a variety of ways. (Edinburgh Medical Journal, May, 1896.)

PELVIC INFLAMMATION.

Dr. Montgomery mentions the following advantages of operation by the vaginal route:—(1) It permits us to explore, treat, and preserve organs which would otherwise be sacrificed; (2) it promotes drainage from the most dependent portion of the pelvis, and enables the large peritoneum to be protected by plastic barriers; (3) it enables us to remove the uterus and appendages with less danger and much more subsequent comfort than if the abdominal incision had been practised; (4) the adhesions which nature has provided to protect the vital organs are undisturbed, and consequently the patient is less likely to have subsequent obstructive symptoms; (5) the convalescence is shorter, and the patient avoids such annoying sequelæ as abdominal sinus, painful cicatrix, weakened ventrum, and ventral hernia. (Therapeutic Gazette, December 16, 1895.)

PYOSALPINX.

Dr. William C. Wood thus mentions a hitherto undescribed symptom:—In every case of salpingitis coming under my observation the patient has complained of a severe pain over the region of the liver, so severe in some cases as to lead to serious questioning on the part of the patient and her friends, and in one case on the part of counsel, as to the correctness of my diagnosis. I have never met with a mention of this pain in any text-book, yet its constancy seems to be more than a coincidence. It is due, I believe, to reflex action resulting from pressure upon the pelvic nerves. Illustrative cases are then given. I have seen a number of others in which this pain was the subject of complaint, and for which anodynes were required when the pelvic pain was well borne. In some of them the diagnosis was confirmed by operation, in others no operation was performed. (New York Medical Journal, October 26, 1895.)

SALINE ENEMATA IN HEMORRHAGE.

By John P. McNeill, M.D. In cases of post-partum hemorrhage the treatment by transfusion or sterilised intravenous saline solutions has long received well-merited attention. I believe, however, that the value of voluminous intestinal enemata of warm water and salt in such cases is insufficiently appreciated. But, to be effectual, the tube must penetrate the sygmoid flexure, and command the absorptive powers of the descending, transverse, and ascending colon; therefore a long tube must be used and the injection pushed to tension limits. If it prove true, as my case seems to hint, that a long enema tube is a fair substitute for an expensive and difficult transfusion apparatus, a rather important departure in surgery has been made. This, very briefly, is my case:—Mrs. X., abortion, flooding, practically dead from hemorrhage; respiration ceased; cardiac action reduced to faint muscular contractions, audible by stethoscope; no pulse anywhere; unconsciousness absolute; body cold; power of deglutition, as well as sensation, completely gone. I poured the contents of the kitchen kettle into a large basin, cooled to tepid from the bedroom jug, to the volume of about from one to two gallons, tossed in a teaspoonful of salt from the cruet, and filled the large intestine to tension limits with long tube, which I happened to have attached to syringe in my bag. Removed fœtus clots, &c., by rapid digital movement, and employed artificial respiration as for the drowned. I had also injected hypodermically both strychnine and ether, with no result whatever, so far as I could see. After some fifteen or twenty minutes she began to breathe, was soon able to swallow a stimulant, and made an uninterrupted recovery. I have no doubt whatever that the voluminous injection saved her. None whatever of that large quantity of water was ever seen again. (Australasian Medical Gazette, December 20, 1895.)

STREPTOCOCCUS PYOGENES.

In view of the recent introduction of the streptococcus serum the following, from an abstract of Dr. Drummond Robinson's paper, read before the London Obstetrical Society, is of interest:—Dr. Robinson points out the fact that in fatal cases of puerperal sepsis the streptococcus pyogenes is constantly found in the blood and tissues. All pathogenic organisms vary in virulence under various circumstances. The virulence of streptococcus pyogenes is diminished by prolonged exposure to the action of the air, and increased by passage through the blood of a rabbit. Normally after labour the uterine cavity contains no microbes, but in cases of puerperal sepsis, many micro-organisms of different sorts are found both in the uterine cavity and in the substance of the mucous membrane (decidua). Of these, however, the streptococcus pyogenes appears alone to be able to pass through the uterine wall along the veins and lymphatics, and so to cause a general infection. The streptococcus pyogenes may in these cases cause death without producing any obvious lesion. Such cases of pure septicæmia are uncommon; three such cases are cited. Much more frequently the streptococcus sets up suppuration in various tissues. Sometimes this microbe produces false membranes of the peritoneum or genital tract, with or without suppuration; two cases are cited. Lastly, in some fatal cases of phlegmasia dolens the streptococcus pyogenes has been found in the clots plugging the veins of the uterine walls and broad ligaments—more rarely in the clots of the iliac veins—and even infiltrating the vein wall itself. (Transactions of the London Obstetrical Society, 1895, part iv.)

SYMPHYSIOTOMY.

The January number of the *Annales de Gynécologie* contains a paper by Professor Pinard recording the results of labour in cases of pelvic contraction at the Clinique Baudelocque during the year 1895. In the period in question there were 107 cases of contracted pelvis; 45 of the patients were primiparæ and 62 multiparæ. Among 107 cases there were 5 deaths of mothers. In 3 of the fatal cases delivery was effected by symphysiotomy, in 1 by basiotripsy, and in 1 by Porro's operation. In 77 of the 107 cases delivery occurred spontaneously. In the remaining 30 cases some artificial aid was employed. In 20 of the 30 cases delivery was effected by symphysiotomy. In the other 10 cases delivery was effected as follows:—In 1 case by version, in 4 cases by basiotripsy, in 1 case by Porro's operation, in 3 cases by forceps, and there was 1 case in which abortion was induced. Among the 20 cases of symphysiotomy there were 3 deaths of mothers—*i.e.*, a mortality of 15 per cent. —and in 3 of the cases the children died, so that the mortality of the children was also 15 per cent. In the paper referred to Professor Pinard gives also the numbers of his symphysiotomie prior to 1895. His total up to date is 69 operations, with 7 deaths of mothers and 8 deaths of children. The mortality has, therefore, been about 10 per cent. It is particularly interesting to observe that among his cases of contracted pelvis last year Professor Pinard had 5 patients on whom he had operated previously, in 4 by symphysiotomy and in 1 by ischio-pubiotomy. In 3 of these symphysiotomy was necessary a second time, but in 2 delivery occurred spontaneously; in one of them, however, labour came on naturally at seven months and a half. A formidable objection to symphysiotomy has been that it endangers the solidity of the pelvis. Sufficient time has now passed to enable Professor Pinard to speak definitely on this point, and he says positively that this solidity is not compromised in subsequent pregnancies, or by repeated symphysiotomies. As regards the best mode of extracting the child after symphysiotomy, when the head is high up he prefers version to delivery with the *forceps*. He protests against the statistics of symphysiotomy being compared, on the one hand, with those of the Cæsarian section, and, on the other, with those of the induction of premature labour. For in cases of Cæsarean section he asserts operators too often choose their cases, and perform embryotomy on a living child if they suspect the patient has already been infected; and as regards the induction of labour, the comparison is not fair, because the operation is undertaken in healthy women who are carefully prepared, so that the risks of infection are reduced to the minimum. On the other hand, Professor Pinard performs symphysiotomy in all cases where the child is living—apart from any consideration of the state of the mother or of the surroundings from which she may have just come. He makes a telling criticism in favour of symphysiotomy as compared with the induction of labour in cases of slight pelvic contraction; in the former the operation is undertaken at term, and when the need for interference is imperative and incontrovertible; but what about women delivered spontaneously of healthy, full-term children, for whom, according to theory, induction of labour, with its high infantile mortality, immediate or remote, had been recommended? It is one of the benefits resulting from the introduction of symphysiotomy that the number of such unnecessary inductions of labour has been reduced. (The Lancet, February 8, 1896.)

TUBERCULOSIS OF THE ENDOMETRIUM.

The following is taken from the recapitulation in an interesting article including 5 cases by Dr. T. S. Cullen (*Johns Hopkins Hospital Report*, 1895, III, p. 106):—Tuberculosis of the endometrium may be divided into two varieties:—(*a*) Miliary tuberculosis; (*b*) chronic diffuse tuberculosis. Chronic diffuse tuberculosis usually begins near the top of the fundus. In the earliest stages it cannot be recognised macroscopically. Later the small yellowish-white nodules can be seen beneath the surface; these gradually increase in size, give the mucosa an uneven appearance and go on to ulceration. The endometrium is eventually transformed into caseous material, while the uterine cavity may, if the cervix be occluded, become filled with caseous material, giving rise to a condition simulating pyometra. From the endometrium the process extends to the uterine muscle. The Fallopian tubes are usually first involved, and by the time that the endometral tuberculosis has commenced they have undergone such caseation that there is no difficulty in making out the tuberculous process with the naked eye. In four of the accompanying cases the tuberculosis of the tubes could be made out macroscopically. The ovaries are usually normal, but in some cases are involved. Tuberculosis of the endometrium is generally secondary to that of the tubes, but may be caused by infection from without. There are no fixed symptoms. Those present will to a large extent depend upon the coincident tuberculosis of the tubes. There may or may not be irregularity of the menstruation. The diagnosis can be made by microscopical examination of the scrapings except in the very early stages where the tuberculosis is confined to the cornua and is beyond reach of the curette. To the naked eye the scrapings may appear perfectly normal. As tuberculosis of the endometrium is usually only detected when associated with tuberculosis of the tubes, it is better to remove the uterus with the tubes, as the process is likely to advance in the former.

UTERINE APPENDAGES.—Remote Results of Removal.

Dr. E. E. Montgomery, of Philadelphia (*Journal of the American Medical Association*, August 31, 1895, p. 364). Loss or perversion of sexual appetite, vaso-motor disturbances, changes in pigmentation, are instanced as sequences of this operation. In addition, frequent and severe attacks of neuralgia, chiefly in both ovarian regions, may occur, with pain localised to the uterus, intestines, bladder, or rectum. The suffering may be much more marked than before interference. The preclusion of child-bearing not seldom leads to a profound melancholy associated with diminishing sexual desire. All these phenomena may be accentuated by some physical sequelæ, such as fistulæ, ventral herniæ, painful cicatrices, adhesion of the stump to various organs. The ligature may become septic, and lead to abscess formation and a suppurating tract, which only heals after the ligature has been discharged. Lastly, profuse leucorrhœa and metrostaxis may ensue, and be persistent. Dr. Montgomery concludes that (1) no mutilation should be performed when there is any chance of relieving the inflammatory condition by means of colpotomy and drainage ; (2) If partial disease of ovary and tube exist, an attempt should be made to preserve the healthy portions by resection ; (3) if the disease of the ovaries and tubes present is so marked that complete removal is considered necessary, less subsequent nervous phenomena occur if hysterectomy be performed in addition ; (4) castration for neuroses should only be resorted to as a last resource. (The Practitioner, November, 1895.)

VAGINA ADNEXA OPERATIONS.

Mackenrodit read this paper before the Berlin Medical Society. He said that until recently the principal operation for disease of the adnexa had been laparotomy, and the results had, no doubt, been brilliant. One reason for the change of operation had been that laparotomy seemed too great an operation for the simple pelvic adhesions that led to collections in the tubes, &c. A second reason was that, whilst laparotomy was a perfectly safe operation in cases where the suppuration had worked itself out, so to speak, it was not so whilst the infection was still active, that is in acute suppurations and abscesses in the ovaries and tubes, and in those that tended to empty into the rectum, vagina, and bladder. In a restricted number of cases he had arrived at the idea of opening Douglas's pouch, whereby the adnexa could be removed, and of closing the operation by simple drainage of the cavity without suture. The operation performed in this way is much simpler than that of opening the anterior vaginal arch. Adhesions are separated easily by the combined method. Operation may be performed in this way in cases of perforating suppurating collections, that would be impossible by laparotomy. The technique is very simple and comprised in five acts :—(1) Curettement and raising of the closed uterus (preparatory); (2) incision (transverse, sagittal or combined); (3) separation of adhesions (bi-manual); (4) dragging down by means of forceps and formation of pedicles; (5) closure by drainage. In case ligature is difficult the forceps must be left on and iodoform gauze introduced. The speaker had operated on 31 cases in this way. These cases were divisible into the following classes :—(1) Simple adhesions (three cases) where it was possible to break down the adhesions around the tubes and ovaries; cases of adherent retro-flexion of the uterus could only be treated in this way. (2) Six cases of closure of the tubes and follicular degeneration of the ovaries. (3) Six cases of extra-uterine gestation (tubal). (4) Seven cases of suppuration of the adnexa. (5) Seven cases of large cystomata and dermoids. (6) One case of myoma. (7) One case of removal of the tubes for sterility. Recovery took place in all cases without the least interruption. The drainage was removed on the third day. Generally, the patients left their beds on the seventh or eighth day. One criterion was of special importance in contemplating vaginal operation, and that was to operate by the vagina only when it was possible by the bi-manual method to reach the tumour from below. Bearing in mind the simple technique it would not be necessary to treat pelvic inflammation from any cause for such a length of time by palliative methods. (Medical Press and Circular, May 25, 1896.)

VESICO-VAGINAL FISTULÆ.—Prophylactic Treatment of.

Schultze (*Centralblatt für Gynäkologie*, 1895, No. 27) calls attention to the fact that cervico-vesico-vaginal fistulæ tend to heal spontaneously, and that they are more frequent after labour than is generally supposed. On the contrary, minute vesico-vaginal fistulæ often require operative treatment. Prolonged pressure of the head is delayed first stage after premature escape of the liquor amnii, especially in cases of contracted pelvis, is more apt to be the cause of cervico-vesical fistulæ than is instrumental delivery, although the laity are prone to attribute it to the latter. The unwise use of ergot is another prominent etiological factor. After all difficult labours, in which the bladder has been subjected to prolonged pressure, the urine should be drawn regularly every eight hours for a few days. By adopting this simple procedure a considerable portion of the cases of vesico-vaginal fistulæ can be prevented. (The American Journal of the Medical Sciences, December, 1895.)

Medicine.

GENERAL MEDICINE AND THERAPEUTIC:

ART. I.—THE *RÔLE* OF FEVER IN THE MODIFICATION OF DISEASE.

By H. A. HARE, M.D.,
Professor of Therapeutics in the Jefferson Medical College of Philadelphia.

[We regret that we cannot reproduce verbatim Professor Hare's excellent paper, as it is of a most practical character. Attention may especially be drawn to his conclusions, as antipyretic treatment by drugs is still apt to be much abused :]

The first of the topics here considered is the *rôle* played by fever in the modification of disease, when it is due to an infection by germs or a poison ; the second is, the reason why antipyretic drugs do harm ; and the third, the rational explanation of the good results obtained by cold bathing. Notwithstanding the fact that the usefulness of fever has been recognised in the past, it is my intention to bring forward additional evidence in support of this view and against the view that fever is harmful ; or, in other words, to show, by the introduction of the newer evidence produced in recent years by bacteriological and other research, that fever [illegible] not an unmitigated evil, and that when we reduce fever by the use of drugs we not only remove a symptom but deprive the body of a therapeutic measure devised by nature for the protection of the individual.

Having found that fever in fairly moderate degree is not harmful, we can progress to the demonstration of the fact that it is useful. The belief that fever is a protective against infection seems sanctioned by the following facts :—(1) Fever is a condition developing in all healthy animals as soon as they undertake, as do all healthy animals, to resist infection ; and while it may be urged that it is a coincident symptom alone, this hardly seems probable in view of its importance—that is to say, Nature would hardly devise a plan for vital resistance handicapped by such an important phenomenon if it were useless in itself ; (2) animals which receive sufficiently large doses of germs or their toxins to cause death, beyond all doubt often develop very little fever or none at all, or, in other words, are so overwhelmed that resisting methods cannot be developed by the body; (3) animals which receive smaller doses speedily develop fever and survive, but if the same dose be given and fever be prevented by artificial means they die as promptly as if large doses were used; (4) when an animal is immunized by repeated doses of toxic material, it has a febrile movement with each effort to develop antitoxin until it is completely immune, the fever being greatest in the most susceptible subject, decreasing with each infection as the animal's tissues find it less necessary to manufacture at short notice large amounts of antitoxin.

Having shown, then, that fever is a protective process, we can adduce evidence that its absence prevents the system of the animal infected from resisting with success the onslaught of its enemies.

I think we can affirm that fever does aid in the production of immunity, and that this is probably due to the increased rapidity of the vital processes produced by the rise of bodily temperature. In other words, the functional activity of all the organs and tissues being increased, the various methods adopted by Nature for the protection of the body against infection are stimulated to the utmost. It is not necessary to dilate upon the importance of the emunctories, such as the skin, kidneys, and bowels, in excreting effete materials from the body. Every one of us knows that if we can keep these parts active during an infectious disease, as, for example, scarlet fever, we will have recovery as the probable result, and we also know that just so soon as they become inactive grave symptoms arise.

The well-known experiments of Schiff and Lautenbach have shown that the ability of the glandular apparatus, particularly the liver, to destroy poisons, is extraordinary; and this ability depends upon the blood supply and vascularity of the gland, for it was also found by them that the mere passage of the poison through a large capillary network greatly reduced its toxic power by oxidation. Increased glandular activity all over the body means, therefore, two important changes—first, an increased blood-supply to the gland, that is, an increased capillary circulation with consequent increase in the oxidizing power of the part; and, second, an increase in bodily heat due to the glandular activity, for we know that increased oxidation means increased heat, and that the bodily heat is largely maintained by this means.

The glands of the body not only act in the way just described, but, in addition, they develop leucocytes, which possess the power in many cases of destroying the germs of disease by phagocytosis, or by aiding in some as yet unknown way in the formation of antitoxin. Increased leucocytosis is therefore a much-to-be-desired result; and as fever causes as well as results from increased glandular activity, it may stimulate the development of leucocytosis and aid in destroying the infection. That fever does aid in the production of leucocytosis *per se* is, however, a matter of doubt, and the experiments of Carter, of Philadelphia, and of other investigators, such as Rorigh[illegible] and Ischlenoff, seem to indicate that there is no relationship between a pure rise of temperature and leucocytosis—that is to say, artificially produced fever does not increase the number of leucocytes in the blood—but if certain infections are present their increase becomes extraordinary. From these facts the conclusion has been reached that fever and increased leucocytosis are coincident and do not bear the relation of cause and effect. On the other hand, it is equally true that in some conditions leucocytosis ceases the moment the temperature of the patient falls to the normal. Thus, in pneumonia, leucocytosis ceases with the crisis—which result may be due to other causes, of course, than the fall in temperature. Taking it all in all, therefore, we must conclude that whatever value fever may have in infectious diseases, it does not do good always by aiding leucocytosis, if experiments can be relied upon.

Many years ago it was the effort of physicians to reduce fevers by diaphoresis and diuresis, and they often succeeded in aborting febrile movement or aiding in its arrest or fall by measures too often to-day considered homely and useless. The fact remains, however, that whether they succeeded or not in relieving fever, they did no harm, and if the fever was severe enough to resist their measures the patient remained equally able to resist the onset of the infection producing it. Further than this, two admirable results were attained, namely, that the skin and kidneys were flushed, cleansed, and made ready for the task of eliminating materials which we call to-day "toxins," and any poisonous material already formed in the tissues or bowels was gotten rid of. Unfortunately for the profession, it was discovered that digitalis sometimes reduced fever, and as this symptom was often the most manifest and annoying, this drug began to be used for the reduction of temperature, and with it quinine began to take a valued place on account of its antipyretic and specific effect in malarial fevers. It was the fact that quinine was futile during the early stages of all fever not malarial that roused the desire for something more active, and the nearness of the period of ridiculous fear of exposure to cold in fevers excluded cold applications from the therapy of such cases. As a result salicylic acid was employed, and from this it was but a step to the common antipyretics of to-day.

There is, however, abundant evidence to show that the older methods of reducing fever in mild infectious cases by the production of sweating and increased glandular secretion all over the body had a far more rational basis than has the employment of antipyretic drugs, and that fevers which they failed to abort ran their course in many cases to the distinct benefit of the patient; further, that antipyretic drugs in reducing fever decrease the vital resistance of the patient, and that the use of the cold bath or cold sponging as employed to-day does not do good by the reduction of temperature so much as by increasing glandular and other vital activities.

Bearing in mind the four methods of Nature just named for the protection of the body—namely, elimination of poison by the emunctories, the development of antitoxin by the glands and other tissues, the production of fever to stimulate and support the system, and, as a result, the increased functional activity, and the development of leucocytosis—we can now go still further and show that the use of antipyretic measures is only to be resorted to in cases where the fever is excessive, and that, if employed, only those are to be used which reduce the fever moderately and either increase the ability of the system to antagonise the infection or at least do not hinder it from doing so. For these last reasons I believe that antipyretic drugs should very rarely be used for the purpose of reducing fever, for they not only remove fever, but at the same time depress the nervous centres governing heat-production and increase the work of the emunctories already loaded down by the poison brought to them for elimination; and, more important than all to those who believe in phagocytosis, they arrest the development of leucocytosis and thereby remove one of the means of destroying the germs of disease (according to one theory), or of developing antitoxin (according to another). The experimental facts seem well founded upon clinical results, for under the antipyretic method of treatment the mortality of infectious diseases has been as high or higher than when antipyretics, as we call them, were practically unknown; the death-rate from typhoid fever, for example, under antipyrin or similar treatment being about 25 per cent., while in cases treated by the cold bath it is from 1 to 5 per cent. as a rule.

The natural thought is that if antipyresis is harmful when obtained by drugs it is also harmful when obtained by cold baths. Yet clinical results prove the contrary. The fact that cold bathing does decrease the mortality of typhoid in the general run of cases is established, and it is not credible that the mere abstraction of heat can influence the progress of so grave a disease. I have long felt that the cold bath did more than abstract heat, and I venture to advance the idea that it does so by permitting the tissues to destroy the poison of the disease by oxidation or allied processes. By the use of antipyretic drugs we prevent fever by decreasing the production of heat, and thereby inhibit oxidation processes in those tissues which develop the most heat and destroy the greater part of the infected poison, be it microbic or a toxin from the growth of germs. That is, we prevent the body from performing the protective work which it would do under the sole guidance of Nature. On the other hand, if the bath be employed, we actually increase the temperature of the internal organs, as shown by Liebermeister.

The cold bath really increases the destruction of toxin, if I am right in believing that heat does aid in combating infection. The cold bath abstracts heat only, and if used in moderation, as it is when properly employed, in all fevers actually increases bodily metabolism or tissue-interchange, and consequently acts in much the same manner that an increased draught increases and makes more perfect the combustion of coal in a stove.

Liebermeister, Röhrig, and Zuntz have also shown that the use of cold applied externally increases oxidation in the body, so that a larger amount of oxygen is taken up and more CO_2 eliminated; and the experiments of Thermes show that cold bathing increases the number of the blood corpuscles and the amount of their hæmoglobin. Winternitz has confirmed this observation. The differences in the effect of the antipyretic drug and the bath are notable.

Elaborate clinical studies in hydrotherapy in fevers and other diseases not associated with fever show that the cold bath also stimulates glandular activity and leucocytosis, improves the tone of the circulation and nervous system, and increases vital activity everywhere, and that it also increases the urinary flow and the quantity of solids in the urine. The cold bath has a physiological action far more important than the withdrawal of heat, this being a minor and side issue, and it really puts the system in the best trim to resist disease. Only when used for a protracted period of time in such a way that it abstracts more heat than the body can make, does it really reduce the temperature of the entire body.

My views in regard to these questions may therefore be summed up as follows:—(1) Moderate fever has been proved to be in itself harmless, and hyperpyrexia is of itself harmful; (2) moderate fever has a useful function to perform in the body in the presence of an infection; (3) cold baths do good, not by the mere abstraction of heat, but by increasing metabolism and the rapidity of all vital processes; (4) the use of antipyretic drugs is contra-indicated in all infectious diseases.—*Therapeutic Gazette, February* 15, 1896, *p.* 98.

2.—STUDIES IN TYPHOID FEVER.

By William Osler, M.D., F.R.C.P., of Baltimore.

[The following is taken from the *Johns Hopkins Hospital Reports*, 1895.]

(1.) *Five years' experience with the cold bath treatment.*—Two advantages are claimed for hydrotherapy in typhoid fever—a mitigation of the general symptoms of the disease, and a reduction in the mortality. Our experience during the past five years bears out these claims. In general hospitals, to which cases rarely are admitted before the end of the first week, the full benefits of the cold bath, as described by Brand, cannot be expected; nevertheless, in any large series, the severer manifestations appear to be less common. As has been urged so often and so ably by many writers, the beneficial action is not so much special and antipyretic as general, tonic, and roborant. The typhoid picture is not so frequently seen, and we may have 20 or more cases under treatment without an instance of dry tongue or of delirium among them. It is a mistake to claim, as do the too ardent advocates of the plan, that severe nervous symptoms are never seen. I have taken the pains to go over carefully our records on this point. There were in the first three years 13 cases, in the past two years 9 cases with delirium. Most of these were protracted cases which had from 75 to 120 baths.

A far more important claim is that the use of the cold bath reduces the mortality from the disease. The comparison of death-rates as a measure of the efficacy of any plans of treatment is notoriously uncertain unless all the circumstances are taken into account. In our own figures for the past five years, for example, illustrate this—6·2 per cent. in the bathed cases, 10 in the unbathed cases—as the latter group is made up entirely of cases too mild to bathe and 6 patients in whom either the disease was not recognised or who were too ill on admission to treat. Statistics have a value in this connection only when the figures on which they are based are numerous enough to neutralise in some measure their notorious mobility. Small groups of cases are useless; 24 per cent. of mortality in our first year in 33 cases, and a series of nearly 50 bathed cases without a death, illustrate the liability to error in discussing a few cases. Unfortunately, typhoid fever is a disease in which the cases may be reckoned by hundreds and thousands, and the average mortality in general and special hospitals throughout Europe and America is easily gathered. The rate may be placed between 15 and 20 in each 100 cases. In the Metropolitan Fever Hospitals, London, the death-rate, as given in the Report for 1893, was 17 per cent.

The cold bath treatment, rigidly enforced, appears to save from 6 to 8 in each century of typhoid patients admitted to the care of the Hospital physician. While I enforce the method for its results, I am not enamoured of the practice.

(2) *Chills in typhoid fever.*—In the systematic writers on typhoid fever scarcely a reference is found to chills, except as a symptom of the onset of the disease. Now and again in the journals a case is reported in which chills have been a special feature, and the complication is spoken of as a manifestation of ague. Peabody stated that he had twice seen chills in connection with pyæmic abscesses in the kidneys. He had also seen "severe chills followed by elevation of temperature as a symptom of typhoid fever, which did not affect the subsequent course of the disease, the patient getting well without the administration of quinine, and getting well apparently as other patients do who have not these symptoms." Janeway remarked that the chills were not necessarily due to the development of an intercurrent disease. He held that they were often caused by treatment. "If we give the modern antipyretics in large doses chills will occur, which are due simply to the fact that the temperature has been depressed, and then it rises, and this rise is accompanied by mild and sometimes by severe chills. Drop your antipyretics and the chills disappear."

Bouveret, who has reported 4 interesting cases, regards the chills as due to an irregular or disturbed elimination of the poison, a large volume of which, thrown into the blood in a short period, may cause a rigor. (*a*) *At the onset of the disease.*—Of 79 cases treated to conclusion during the sixth year of the Hospital work there were 13 in which the disease began with shaking chills. In 2 cases there were several severe rigors, in 3 cases there were two, while in 8 the rigor was single. (*b*) *At the onset of the relapse.* (*c*) *Chills as a result of treatment.*—Perhaps the most common cause of chills in typhoid fever is the use of medicine, particularly antipyretics. Following a dose of 5 or 10 grains of antipyrin a chill is not infrequent. Last year I saw in consultation a patient who had had chills for ten days, and had become very anæmic. The physician thought the chills were septic, and was surprised when I suggested that the antipyrin, which had been given in full doses, was the cause. The chills ceased with the last dose of the medicine. In 1 case a chill followed the injection of a sterilised culture of typhoid bacilli, in 2 the external application of guiacol. (*d*) *Chills with onset of complications.*—During the height of the fever, or after convalescence has begun, a rigor may precede the development of pneumonia, pleurisy, acute otitis, suppuration in the mesenteric veins, pyæmic abscesses of the kidneys, perforation of ileum or appendix, or an acute periostitis. It sometimes occurs with thrombosis of the femoral or saphenous veins. In rare cases it may precede the development of acute and fatal hyperpyrexia. On the whole, however, rigors are rare in the complications of typhoid fever, as will be noticed in the full analysis which I have given of our cases. In thrombosis a chill may occur at the onset, or recurring rigors may be associated later with suppuration in the clot and with the development of pyæmia. (*c*) *Chills (septic?) during convalescence in severe and protracted cases.*—In a few instances rigors occur throughout the course of the fever, without any local symptoms to account for them. The following cases are of great interest, inasmuch as the chills were not associated, so far as could be ascertained, with any complication, and, though very alarming, they gradually subsided, with complete recovery of both patients. (*f*) *Chills due to the concurrent malaria.*—While attributed, as a rule, to malaria, chills occurring in the course of typhoid fever are very rarely due to this cause. In the cases already given the blood examination was negative. Among 333 cases of malaria and 389 cases of typhoid fever treated in the wards in no instance have the diseases been concurrent. The cases reported by Gilman Thompson, in the paper referred to, appear quite conclusive, as the parasites were found during the chills. We have had several instances in which the typhoid fever followed malaria. A case of great interest took place, in which a chill occurred in the height of an attack of typhoid fever which followed a continuous malarial fever.

[The cases illustrating these various groups have unfortunately had to be omitted. We saw some years ago a case of typhoid fever where the onset of a gangrenous broncho pneumonia was marked by a rigor. This rigor was very puzzling, as hardly any reference could be found to it in the recognised text-books on typhoid fever.—E.F.T.]

3.—ANTITOXIN TREATMENT AND SEROTHERAPY.

By Richard T. Hewlett, M.D., M.R.C.P.,
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We know that a large number of diseases are dependent upon bacteria, and it has been possible in some instances to isolate a specific micro-organism, as, for example, in diphtheria, tetanus, and tuberculosis. The organisms can be cultivated outside the body and reproduce the disease on inoculation, their ill effects being due, in the main, to the elaboration of chemical poisons or toxins.

For the preparation of an antitoxin the specific micro-organism of the particular disease—the diphtheria bacillus for diphtheria, the tetanus bacillus for tetanus—is so cultivated that it produces its toxins. These toxins, either freed from or containing the micro-organisms, are inoculated into a suitable animal, generally a horse, with many precautions which need not be detailed, and commencing with very small doses. With care the amount of toxin injected can be gradually increased, until ultimately a dose many hundred times greater than the minimal fatal one for an untreated animal may be given with impunity. Behring found that concurrently with the appearance and progress of this remarkable insusceptibility the blood and blood-serum of the animal will confer a like insusceptibility upon another animal inoculated with it, or even cure the disease when in progress. A blood-serum possessed of these immunising and curative properties is termed an antitoxin. The antitoxin seems to render the cells and tissues of the body insusceptible to the action of the toxin; it does not act by directly neutralising the toxin in the sense that an alkali neutralises an acid. The immunising or vaccinating properties of the antitoxins are probably destined to be of considerable importance, and instances are already recorded of epidemics of diphtheria in schools apparently stopped by the "vaccination" of all the inmates with diphtheria antitoxin. The immunising effects are, however, transient, and last only about a month.

The weight of evidence is entirely favourable to the antitoxin treatment of diphtheria. Goodall, during the first half of this year, treated at the Eastern Fever Hospital 241 cases of diphtheria under fifteen years of age, 105 with antitoxin and 136 without; the mortality among the former was only 22·8, but among the latter it was 33·6 per cent. Of children under five years the mortality was with antitoxin 29·8, and without 44·7 per cent. Von Ranke of Munich had a death-rate of from 52 to 57 per cent. from diphtheria in his clinic during the eight years preceding the antitoxin treatment; under it the mortality was only 17·7 per cent. Baginsky of Berlin, in a series of 525 cases treated with antitoxin, had a mortality of only 15·6 per cent., while previously it had been 41 per cent. Perhaps the most striking feature of all was that during an interruption of the serum treatment, owing to a failure of the supply, the mortality among 126 children rose to 48·4 per cent., and fell again when the remedy was resumed; and a similar experience is recorded by others. Biggs of New York has treated 400—500 cases with a mortality of about 16 per cent.; previously it had been 46 per cent. To avoid the fallacies introduced by considering small series of cases, Welch has collected and analysed the various statistics in a valuable paper; no less than 7,166 cases are dealt with, showing a general mortality of only 17·3 per cent., whereas formerly it was 42 per cent.

The course of the disease, as recorded by clinical observers, seems to be equally in favour of antitoxin treatment. Washbourn says, "the membrane loosens and clears off rapidly, the temperature, if high, is lowered, and the pulse is slowed and gains in force." Tirard describes the effects of the treatment as very striking; the membrane "went," and there was a marked improvement in the general condition. Caiger, of the South-Western Fever Hospital, states that the duration of the membrane is lessened, that the membrane and swelling soon disappear, and that even in the fatal cases life is prolonged, while Baginsky declared that in his experience the whole character of the disease had changed under the antitoxin treatment.

The effect of antitoxin in preventing the spread of the membrane, in loosening it and causing its disappearance, and in reducing swelling, has been to diminish the need for tracheotomy; and not only that, but if laryngeal obstruction be so great as to require operative interference, intubation is usually successful. This is some of the evidence in support of the antitoxin treatment of diphtheria. Now let us consider some of the objections which have been raised against it. With regard to the renal complications, albuminuria, nephritis, and anuria, which are stated by Lennox Browne and others to be more frequent under the antitoxin treatment, it may be said that this is not the experience of the majority of observers. Experimentally, they do not occur, and Martin, in his clinic at the "Hôpital des Enfants Malades" in Paris, constantly points out the infrequency of albuminuria among the diphtheria cases treated with antitoxin as compared with pre-antitoxin days. On the other hand, it is quite possible that in some instances the foreign albumin injected as antitoxin may be excreted by the kidneys, and so give rise to a spurious albuminuria. Another objection sometimes urged is that if antitoxin be a specific, the mortality from diphtheria should be reduced to almost nil. Such an assertion is ridiculous; no remedy will cure all cases of a disease, and many failures must be known to every practitioner with such specifics as quinine and mercury in malaria and syphilis respectively. But further than this, antitoxin is powerless to repair damage done to a tissue by the action of the circulating diphtheria toxins—in fact, the result of such damage is probably little influenced by the use of antitoxin. Therefore it is of the utmost importance that antitoxin be used as early as possible before the diphtheria toxins have injured the various tissues; when this can be done such injury will not occur, for the cells and tissues will have been rendered resistant.

This is definitely proved by experiment, and, what is more, is fully borne out by clinical facts.

Another point is the dose. A definite amount of antitoxin is required to neutralise a given quantity of diphtheria toxin, and the antitoxin has to be standardised beforehand. Consequently it is important to follow the instructions sent out with the various "brands," and the gradation of dose according to the age of the patient is not to be observed in antitoxin treatment, the dose required for a young child being probably never less than half that for an adult. As regards dosage, we have not yet arrived at finality, and more experience is required on this point. Of the British Institute serum, for example, the dose recommended is 10 c.c. to 20 c.c., with a total of 30 c.c. to 50 c.c. for a case; while Caiger starts with 50 c.c. and administers in all 160 c.c. to 180 c.c. of the same serum, and considers that he gets better results with the larger amounts. In addition to the use of antitoxin, the ordinary methods of treatment should be employed—rest in the recumbent posture, feeding, stimulants, and especially local applications to the membrane.

Tetanus must next be considered, for its antitoxin was the first to be prepared, and is an extremely active one. In view of the latter fact, it is somewhat disappointing to find that in practice its use has not been followed by such satisfactory results as experiment would lead us to expect. Tetanus is a comparatively infrequent disease, and therefore no extended statistics are available for reference; indeed, up to the present time, the number of cases treated with antitoxin probably does not exceed seventy or eighty. Excluding fallacies as far as possible, a consideration of the published cases indicates a distinct lowering of the mortality, and in some instances the effects of the antitoxin have been very marked. Most observers seem to agree that the acute cases are little benefited by antitoxin, but in the more chronic forms it is distinctly of service.

Experimentally, the effects of the tetanus antitoxin if given early are most marked; but as time elapses after the onset of the disease a point is reached at which it is useless to give antitoxin, as no amount suffices to cure. Herein lies the explanation of the less success of tetanus antitoxin as compared with diphtheria antitoxin. The immunising properties of the tetanus antitoxin are very potent, small quantities injected before the onset of the disease preventing it absolutely. It has therefore been suggested that it would be well to give a preventive inoculation of 10 c.c. of the tetanus antitoxin, repeated two or three times at intervals of two or three weeks in cases where the onset of tetanus might not be improbable; as, for example, lacerated wounds soiled with earth, especially in some tropical countries—India, the West Indies, &c.—where

the disease is not uncommon. The same principle of preventive inoculation in the case of operations on valuable animals in veterinary practice has been adopted with the best results.

In erysipelas, and in certain septicæmic and pyæmic cases which are due to infection with a streptococcus, the antitoxin treatment is promising. The streptococcus is rendered virulent, and horses are immunised with the cultures and yield an antitoxin serum. Two cases of severe puerperal fever and a grave case of erysipelas are reported by Charrin and Roger, and another case of puerperal fever by Jacquot, all treated with success with this antistreptococcus serum.

Many cases of diphtheria are a mixed infection with the streptococcus and the diphtheria bacillus, and for such, a combination streptococcus and diphtheria antitoxin would probably be an improvement upon simple diphtheria antitoxin. There are many experimental difficulties in the preparation of an antistreptococcus serum, but the treatment which has been only recently introduced is distinctly encouraging.

A remedy for snake-bites has been sought after from time immemorial with little success, but in serotherapy we have apparently a most promising line of treatment.

We now come to some other diseases in which serotherapy has been employed with less successful or doubtful results.

Recently Coley and Emmerich and Scholl have introduced what is practically an erysipelas antitoxin. These authors state that the treatment is very promising ; but, on the other hand, Petersen and Bruns report cases with no improvement, and criticise the method somewhat strongly. If the erysipelas toxins have any curative influence in malignant disease it is difficult to conceive that erysipelas antitoxin, which antagonises these toxins, can act similarly, and there seems to be little evidence up to the present that this form of serum treatment has any value. Another form of serotherapy for malignant disease has been devised by Richet and Héricourt, who subject dogs and asses to a lengthened treatment of inoculation with cancer juice and obtain a curative (?) serum from them ; they state that about fifty cases have been treated with it with diminution in the size of the tumours, retardation of the disease, and general amelioration in the condition of the patients. The authors' own words may be quoted to show the ultimate result of this treatment. They say that "unhappily, at the end of one, one and a half, or two months, a tolerance seems to be established, the disease remains for a time stationary, and then begins to return." The same authors have injected animals with the blood of syphilitics taken during the secondary eruptive stage, and have used the serum of these animals for treatment, it is said with beneficial results ; but here again one is apt to be very sceptical.

Tuberculosis, at least of the internal organs, is still, to a large extent, incurable, in spite of the numerous researches bestowed upon it, and the discovery of a remedy would indeed be welcome. Naturally, experimenters have turned their attention to antitoxin treatment, but the results are too meagre to criticise. Boinet immunises goats with injections of tuberculin, and with their serum states that he has treated eight cases of tuberculosis with marked improvement in their condition. Paquin in America, and Maragliano of Genoa, have been working in a similar direction. The latter prepares his "tuberculous antitoxin" in a similar manner to Boinet, and has treated eighty-two cases with it. He states that while cases with circumscribed foci of disease, little surrounding consolidation, and slight fever are distinctly benefited, those with much broncho-pneumonic consolidation, or with cavities, do not show much improvement. This might be expected, for if there be actual tissue damage antitoxin cannot repair it; the activity of the tissues themselves can alone do this. Moreover, the bacilli being deep-seated and endowed with considerable resistance, an agent possessing a germicidal action in the body would be a desideratum, and it is improbable that the antitoxin would possess this power, though doubtless, if the bacilli could be kept in check sufficiently long, the tissues would gain the upper hand and administer the *coup de grâce*.

Acute croupous pneumonia is regarded nowadays as a specific disease dependent upon Fraenkel's pneumococcus. The Klemperers abroad and Washbourn in this country have attempted to prepare a pneumonia antitoxin, but so far their efforts have not been very successful, as the experimental difficulties are considerable.

Beumer and Peiper have prepared a typhoid antitoxin by injecting sheep for three months with broth cultures of the typhoid baccillus, and experimentally it is very active in neutralising the typhoid toxins, but they have not applied their method to the treatment of the disease in man. Klemperer and Levy have likewise obtained a "*Typhus-heilserum*" and have treated five cases of the disease with it, apparently with beneficial results. From typhoid to cholera is a natural sequence, and a "cholera antitoxin" has been described by Klemperer and by Behring and Ransom, but only experimental details are to hand as yet. It is to be noted that the typhoid fever and cholera of the laboratory differ considerably from the natural diseases, the former being essentially peritoneal affections, while in man they are intestinal, or, at any rate, the primary lesions are intestinal, and therefore it is questionable whether a typhoid or cholera antitoxin, as at present prepared, would be of much service.

Attempts have been made to apply the principle of serotherapy to vaccinia. If this could be done it would possess many advantages over the ordinary vaccine lymph, such as absence of the pyogenic organisms which produce inflammation and suppuration, avoidance of the risks of transferring infection, and a preparation more stable and of definite strength. Hlava claims to have effected this, and to have prepared a serum which will replace vaccine lymph. On the other hand, Kramer and Boyce were unable to produce any immunity with large doses of serum from vaccinated calves, and more recently Beumer and Peiper have come to a like conclusion. Moreover, from the analogy of diphtheria antitoxin, a vaccinia serum, if prepared, though immunising rapidly, would probably produce but a transient immunity, not a protection for long periods of time, as is the case with vaccine lymph. Therefore, though useful for bringing about a rapid protection during an epidemic of variola, it would probably not replace the use of lymph. Of the few attempts made to treat variola with the serum of vaccinia-vaccinated animals nothing need be said here.

Judging by the details which have been published, an antirabic serum has been successfully prepared. There does not appear to be as yet any record of a case of rabies treated with this serum, though experimentally it would seem to possess powerful curative properties. Whether it would replace the Pasteur system of preventive inoculation with an attenuated virus must be left an open question.

Enough has been said to show the importance of antitoxin treatment and serotherapy. The haste with which incomplete details have been published in many instances is much to be deprecated; but time will enable us to separate the chaff from the grain, the false from the true. From all the reports which are to hand respecting antitoxin treatment it can hardly be doubted that it marks a distinct epoch in medical treatment.—*The Practitioner, December*, 1895, *p.* 559.

4.—SEPTICÆMIA FOLLOWING DIPHTHERIA; TREATMENT BY STREPTOCOCCUS ANTITOXINE.—RECOVERY.

By J. E. KELLY, M.D., Surgeon to Charity Hospital.

The following case is interesting, owing to its ætiology, its treatment, and its termination:—

J. B., aged 21 years, a printer by occupation, was first seen on August 6, 1895, when he was suffering from diphtheria. The case was typical, and ran an ordinary course until the disappearance of the false membranes. On August 20 an erysipelatous eruption appeared on his face in the vicinity of the eyes and cheek; at the same time he complained of pains and stiffness in the trunk, arms, and legs. His temperature was only 99·5° F., but his pulse was in the vicinity of 150. The cranio-cervical glands, particularly on the right side, became enlarged, giving the patient the appearance of goitre, and causing well-marked dyspnœa. Subsequently dense, œdematous swelling occurred in all the limbs, rendering passive motion impossible, and causing severe pain. The patient was evidently suffering from streptococcous infection of the gravest type.

On August 27 he was admitted into the Gouverneur Hospital. His throat was œdematous, his voice thick, and his tongue swollen, there were sordes on his teeth and lips, which latter were dry and cracked, the pupils were dilated and prostration was marked. Temperature, 100·2° F.; pulse, 1[illegible]4 and irregular respiration, 32. The urine showed no albumin or sugar, but was alkaline in reaction, with a specific gravity of 1·030.

An ample supply of Gibier's streptococcus antitoxine was obtained from the New York Pasteur Institute, and at 11.45 p.m. the first injection was given, the dose being twelve cubic centimetres of antitoxine, to which was added an equal quantity of normal salt solution. In all, twelve injections of antitoxine were given. The following abstract shows the effect of each upon temperature, pulse, and respiration:—After first injection, reduction of temperature, pulse, and respiration, subsequent rise of pulse; after second injection, reduction of pulse, subsequent rise of temperature and respiration; after third injection, reduction of temperature, pulse, and respiration, subsequent rise of pulse and respiration; after fourth injection, reduction of respiration, subsequent rise of temperature; after fifth injection, reduction of temperature and respiration, subsequent rise followed by fall of temperature and respiration; after sixth injection, subsequent rise of temperature, pulse, and respiration, followed by fall of temperature to nearly normal; after seventh injection, reduction of pulse and respiration, subsequent rise of temperature; after eighth injection, reduction of pulse, subsequent rise of respiration, followed by rise of temperature; after ninth injection, reduction of respiration, subsequent rise of temperature and pulse, followed by fall to normal temperature and respiration; pulse remained a little above normal; later there were slight variations in temperature, pulse, and respiration; after tenth injection, subsequent rise of temperature and pulse, followed by fall of temperature; after eleventh injection, subsequent rise of temperature, pulse, and respiration, followed by fall of temperature; after twelfth injection, reduction of temperature, pulse, and respiration. There were subsequent slight variations of temperature and pulse, the latter continuing a little accelerated when the patient was discharged from the hospital.

Thus it will be seen that five injections were followed by a fall of temperature, six by a decrease in the rapidity of the pulse, and seven by a slowing of the respiration. After five other injections the temperature also fell after a slight rise.

As is well known, however, the temperature, pulse, and respiration ratios are not preserved in sepsis, and the above records, while interesting, do not fully represent the effect of the treatment on the patient. As previously stated, when it was determined to use the streptococcus antitoxine, it was as a last resort, owing to the hopeless condition of the patient when regarded from the standpoint of previous experience. Within a few hours after the first injection a reaction appeared, which progressed until convalescence was complete. For this case a hundred and fifty cubic centimetres of streptococcus antitoxic serum were administered without the production of any undesirable effects. This serum was procured from a horse which received by subcutaneous and intravenous injections nearly two thousand cubic centimetres of intensely virulent cultures of streptococcus within a period of eight months. Four weeks were allowed to elapse after the last injection before the horse was bled.—*New York Medical Journal, February* 22, 1896, *p.* 243.

5.—A SHORT ACCOUNT OF THE FIRST ONE HUNDRED CASES OF DIPHTHERIA TREATED AT THE DIPHTHERIA BRANCH OF THE SYDNEY CHILDREN'S HOSPITAL WITH ANTITOXIN, IN COMPARISON WITH THE ONE HUNDRED PRECEDING CASES TREATED WITHOUT.

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The method of treating diphtheria by the injection of antitoxin serum, which has become almost universal during the last twelve months, will always mark this period as a remarkable epoch in the history of medicine.

In giving an account of the first hundred cases treated at the Children's Hospital with antitoxin, we thought it would be interesting and instructive to compare them with the preceding hundred cases treated in the same place in the same way, under exactly similar conditions, the only difference being the injection of diphtheria antitoxin in the last hundred cases. Since the diphtheria ward was opened in July, 1893, all cases admitted have been bacteriologically examined, and we do not classify or call any case diphtheria unless we find the bacillus of Klebs and Löffler.

The first series are cases that were in the hospital from May, 1894, to February, 1895. Second series, the cases that were being treated from February, 1895, to middle of September, 1895. The first series were slightly more severe than the last. All the ten malignant cases in the first series died. Of the six malignant cases in the second series four died and two recovered. One of these cases was admitted on the second day, the other on the fifth. In the first series, without antitoxin, the causes of death were—13 toxæmia, 27 asphyxia, 4 bronchopneumonia, 2 heart-failure, 5 unclassified. With antitoxin, the causes of death were—2 toxæmia, 18 asphyxia, 2 bronchopneumonia, 4 heart-failure. These cases will be dealt with more fully later on. The injection of antitoxin tended to obviate the necessity for opening the trachea.

Since antitoxin has been used, the great majority of tracheotomies are done on admission. The reason of it is this:—A very large number of the cases are brought to the hospital solely on account of the dyspnœa. If it were not for this symptom, which naturally frightens the parents, many of the children that are now sent to the hospital in the last gasp would never leave their homes. If there is not enough membrane in the larynx when the child is admitted to cause dyspnœa, the injection of antitoxin will, in the great majority of cases, do away with the necessity for operating. In cases treated with antitoxin the tracheotomy tube can be left out earlier than in those treated without it.

The day of disease at which antitoxin is injected is very important, and necessarily influences the death-rate. Although no doubt antitoxin should be given at the earliest possible date after the disease is diagnosed, still we cannot agree with those who assert that it does no good after the fourth day. In the 77 cases that recovered in this series the fifth was the average day of disease at which antitoxin was given.

The effect of antitoxin on the well-being of the child is this—that in twenty-four hours, more or less (if it is not a very malignant case), the child becomes less apathetic, brightens up, and begins to play with its toys. In this respect a marked difference to what was formerly observed, when in severe cases the children were generally too ill to take any interest in their surroundings for some days. The use of antitoxin certainly hastens the disappearance of membrane from the throat. In the first series, the longest period before the throat was clear was twenty-two days, and the shortest two days. Average, ten days.

In the second series, the longest period before the throat was clear was nine days, and the shortest two days. Average, four days.

The effect of antitoxin on the local condition where it can be observed is this. There is first a slight inflammatory action at the edge of the patch ; the membrane then begins to curl up, and comes away in pieces, but is not dissolved. Any swelling that there may be of the neck disappears as the throat clears. Since we have used antitoxin we have not noticed any wound diphtheria, neither have there been any cases of re-infection.

Urticaria appeared in 32 cases ; in two cases it was accompanied by joint pains. The average time of its appearance was nine days after the injection of antitoxin. The longest time before it appeared was sixteen days, and the shortest six days.

By taking a sufficient number of suitable cases, we have found that after antitoxin the temperature gradually declines till about the third or fourth day—*i.e.*, when the throat has cleared, it reaches normal. After eliminating the sources of error, we have also found that after antitoxin there is a gradual decline in the pulse rate, and that it reaches normal about the time the throat has cleared.

From an analysis of the records at our command we find that the occurrence of albuminuria and paralysis are about the same in the two series. But, from the evidence before us, we think that, if the cases were treated with antitoxin early enough, the occurrence and severity of albuminuria and paralysis would be greatly diminished. We have seen none of the bad effects attributed to antitoxin by some writers.

All the cases were treated with Ruffer's antitoxin, obtained from the British Institute of Preventive Medicine, with the exception of 21 cases. Of these—15 had Behring's, 4 Aronsen's, 2 Pasteur's. We are unable to say that any one kind of antitoxin is more efficacious than another, because we have not yet had a sufficient number of cases to draw any reliable conclusions. We may say that Behring's, Aronsen's, and Pasteur's preparations seem to keep well, whereas we have found several samples of Ruffer's in an advanced state of decomposition, probably from defective corking. It is, therefore, advisable always to smell antitoxin before using it. Ruffer uses camphor in his serum to keep it fresh. We have had no experience in Burroughs and Wellcome's, or Klein's serum. As to the dosage, the plan we have adopted is this:—Using Ruffer's serum, for a mild case we have injected 10cc., for a medium case 15cc., for a severe case 20cc., followed by 10cc. next day, and 10 more if necessary. We have thought it worth while to devote a few lines to the consideration of the fatal cases.

From the above statistics it will be seen that, in spite of antitoxin, a certain number of cases died, and it behoves us to inquire to what the failure was due, and to see if there is any remedy for it. Two children died of broncho-pneumonia of a sub-acute character. The ages were one year and three months and one year respectively. Both died five weeks after admission. Both were tracheotomy cases, and one developed laryngeal stenosis from granulations. Both had paralytic symptoms. In this class of case, skilful after treatment and careful nursing is all that can be done.

Two children, aged four and five-and-a-half respectively, died of toxæmia. Both were very malignant cases, and appeared for treatment on the eighth and third day of disease. Death resulted in twenty-four hours in each case. Here, we take it, the dose of toxin was so large that the changes necessary to cause death were already produced before the antitoxin came into play.

Four cases died of post-diphtheritic heart-failure. All came for treatment after the fourth day. Two were examples of malignant diphtheria, and two were of a very severe type. Death occurred on the twelfth, thirteenth, sixteenth, and seventeenth days of the disease. We look upon post-diphtheritic heart failure as a paralytic symptom, and, just as other paralytic symptoms occur after antitoxin, so will this form occur occasionally. No amount of stimulation could save these cases.

Fifteen cases died of asphyxia within a short time after tracheotomy. Nine of these children were two years and under. Five were between two and four years, while one was five years old. Two appeared for treatment on the third day, and the remainder from the fourth to the seventh day. The majority died within three days.

Conclusions.—(1) That the one outstanding indication is to get the cases and give antitoxin early; (2) that when the cases are not taken early, it is in the laryngo-tracheal cases of diphtheria in young children that the greatest mortality occurs, while a certain number succumb to broncho-pneumonia, toxæmia, and post-diphtheritic heart-failure; (3) that, with regard to the immediate cause of death in the tracheotomy cases, more extended observations are necessary. (See Pathological report.)

Treatment.—It must not be supposed that all treatment ends with the injection of antitoxin. We said above that, even in severe cases, in twenty-four hours, more or less, after the injection of antitoxin, the child often brightens up, and begins to play with its toys. But, because it does this, it must not be supposed that the child is quite or nearly well. Far from it. The toxæmia had been counteracted, and, as a consequence, the apathy disappears. In laryngo-tracheal cases there is still the danger of asphyxia, even after tracheotomy, for reasons that have been dealt with above. Then, in all cases, there is the asthenia, heart-failure, and the various forms of paralysis to be looked for and combated. We think it advisable to make some local application to the throat. All these cases had their throats swabbed with Liq. Sodii. Chlor., at first every four hours, afterwards twice daily, until the throat was quite clear. This form of treatment is often overdone, and much harm results from misdirected zeal in this direction, especially with very young children. Nearly all these children had perchloride of iron given to them internally. Brandy is given generally from the first day, in varying doses, as it is required. In nasal-diphtheria the nose is syringed two or three times daily with boracic lotion. One of the symptoms that the nurses are told to be ever on the look-out for is coughing on feeding, especially when liquids are being taken. This indicates some paresis of the muscles of deglutition, and it needs prompt attention. Directly this symptom shews itself the child has all its liquids given to it by a tube passed into the œsophagus through the nose. This, and any other symptoms of paralysis, are an indication for the administration of strychnine. A child of two years can take m. i. of liq. strychnine every three or four hours. The dose is increased with age of child. In tracheotomy cases we endeavour to keep the wound as clean as possible. Before the tube is inserted the wound is carefully swabbed with perchloride of mercury 1 in 2,000, and dusted with iodoform. The tubes are always changed twice daily, the wound being carefully cleaned each time. When this is being done the cut edges of the trachea are held open with hooks, the child is induced to cough, and at this time membrane is frequently coughed up. Generally after two days a soft tube is substituted for the hard one. Before we began to use antitoxin, in cases of tracheotomy, a great deal of trypsin was used to relieve the dyspnœa, which came on at varying times after the operation by extension of the membrane to the bronchi. This used frequently to partially dissolve and loosen the membrane. Many cases of extreme dyspnœa recovered after the free use of trypsin, but since antitoxin has been used we have seen no benefit from its use.

All the cases that have had any dypsnœa after the tracheotomy have died, in spite of the free use of trypsin. The explanation of this clinical fact is not yet quite clear.—*Australasian Medical Gazette, February* 20, 1896, *p.* 39.

6.—ON DIPHTHERIA.

[The following is taken from Dr. Williamson's abstract of Dr. Deucher's paper on "The Clinical Diagnosis of Diphtheria" in the *Correspondenz bl. f. Schweizer Herzte.* August, 1895:]

The following are the conclusions at which the author arrives from his clinical and bacteriological work:—True clinical diphtheria of the fauces with typical pseudo-membrane almost always corresponds bacteriologically—especially [illegible] scarlet fever cases be excluded—with "Löffler's" diphtheria (*i.e.*, is always associated with Löffler bacillus). In the punctiform diphtheria, having the character described above, the results of bacteriological examination are the same as in true clinical diphtheria. The disease also may be separated clinically from follicular tonsillitis. In typical follicular tonsillitis usually no diphtheria bacilli are found (they were never found in any of the author's cases). Clinically the disease may be separated from punctiform diphtheria. The so-called streptococcus pseudo-diphtheria presents not only bacteriologically, but also clinically, different features from the true diphtheria (as above mentioned). It holds quite a subordinate place as regards confusion with true diphtheria, especially if scarlatinal diphtheria, which is generally easily distinguished, be excluded. In an apparently simple catarrhal angina, or even upon the normal tonsils, the presence of diphtheria bacilli is not excluded. In such cases the history, presence of diphtheria or croup cases in the neighbourhood, and the occurrence of laryngeal obstruction must be considered. The occurrence of genuine pseudo-membrane in the larynx or trachea is associated almost always with the presence of Löffler's bacillus. In genuine pseudo-membranous laryngeal croup, very frequently diphtheria bacilli are present on the tonsils, though these are apparently only little affected.

Though false membrane can be detected neither in the pharynx nor in the larynx, still true membranous (diphtheritic) croup can be generally diagnosed from pseudo-croup by the history and course of the disease. In the cases diagnosed clinically as pseudo-croup, generally no Löffler's diphtheria bacilli are to be found. Clinically, true diphtheria of the fauces and true diphtheritic croup are diagnosed rather too seldom than too frequently. The occurrence of streptococci along with the diphtheria bacilli does not appear to have the serious significance which has been attributed to it. Negative result of bacteriological examination for the diphtheria bacilli, *per se*, does not justify us in all cases in excluding true diphtheria. Evidence of the diphtheria bacilli can be obtained in about two-thirds of the cases in which they are present chiefly on the tonsils, even by examination of dry preparations.—*Medical Chronicle, October*, 1895, *p.* 51.

7.—REMARKS ON THE TREATMENT OF TETANUS, WITH A REPORT OF A CASE OF CEPHALIC TETANUS TREATED BY INJECTIONS OF ANTITOXIC SERUM.

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[A characteristic case of cephalic tetanus unsuccessfully treated by antitoxic serum is first recorded, and the following is taken from the remarks appended :]

Cephalic tetanus is always due to the infection of a wound with the tetanus bacillus. The wound is situated in some part of the head or face, and especially within the territory of the fifth nerve. It may be a small, trifling, perhaps punctured wound, or a large one contused or complicated by fracture. Earth would unquestionably appear to be the chief means which carries the infection, and implements contaminated with it are most likely to convey the disease. Cephalic tetanus has been observed at almost all ages from quite a tender age up to senility. Men are affected in greatly preponderating numbers.

The most constant and striking feature of cephalic tetanus is the facial paralysis. It may vary in degree, as is well seen in the three cases recorded by Caird. It mostly affects all the branches of the facial nerve, as in the case reported here ; sometimes the lower part of the face has alone been involved. This facial paralysis practically always occurs on the same side as the injury, but it has been seen on the opposite side (Terrilon), and has been even known to be bilateral (Huntingdon). It has been put down by some authorities to a toxic neuritis, but no lesion has hitherto been found in the nerve. The spasm on swallowing is less constant, and therefore less characteristic, than the paralysis of the seventh. Paralysis of some of the other ocular nerves has been noted in some few cases (Roberts, Rockliffe, Sereins). The ptosis in the case recorded here was present, according to the patient's account, before the injury, and a slight ptosis was observed by Mr. Mayo when he first dressed the wound. The fact that this ptosis became much more pronounced as the disease advanced is indisputable. Symptoms referable to a lesion of the fifth nerve have been noted, but they were absent here. Whether a reflex ptosis (Gowers) due to irritation of the fifth nerve can be offered as an explanation in these cases is open to much doubt. Spasm is, of course, a marked feature of the disease, especially in its advanced stages. This spasm is persistent in character, and also comes on in paroxysms. Trismus appears early, but not by any means always before the facial paralysis. The pharyngeal and respiratory muscles may also be affected, as well as the muscles of the trunk. At times the spasm is more marked on one side than on the other, and this is not always the side of the lesion as in the above case. Spasm of the non-paralysed side of the face is not uncommon. Death occurs at varying intervals, often in the second week, by respiratory spasm, sometimes by cardiac failure, &c. It is curious to note how frequently an apparent improvement has occurred shortly before death. It may give rise to delusive hopes of recovery. The temperature nearly always rises in fatal cases, so much so that a raised temperature is of bad import. An excessive frequency of the pulse was noted in the above case. While the temperature and breathing were normal, the pulse ranged from 112 to 130 (see temperature chart on next page).

The diagnosis of cephalic tetanus is generally very easy. The prognosis is very serious. A fair number of recoveries have been reported, but at least half the cases die. Recovery has hardly been seen after the age of 25. In the very acute cases, with short incubation period and rapid development of symptoms, the prognosis is almost, if not completely, hopeless.

In regard to treatment, resection of the wound seems to be useless, at any rate after the first symptoms have developed. Of course the unhealthy wound should receive appropriate local treatment. The cases that have recovered have been mostly treated by chloral and other sedatives, but it is difficult to see, in the light of our present knowledge, how such remedies can be of any real use in combating the disease. The feeding of these patients is obviously of great importance. The nasal tube is of service when pharyngeal spasm is absent, but when, as in the above-named case, the spasm is marked it is impracticable.

is passed, or, at any rate, until the case has been watched for some little time. Most of the cases at St. Bartholomew's which were tapped had been ill, though not in the hospital, for two or three weeks. In some cases paracentesis was performed at once, being urgent, and in many after only two or three days' stay in the hospital.

On the other hand, opinion is equally strong in favour of not leaving the effusion too long unrelieved, and it is generally felt that if an effusion shows no sign of diminution by the end of the third or fourth week it is well to tap.

The reasons for early paracentesis are chiefly theoretical:—First, that the effusion is checked. Of this there is no conclusive evidence. Secondly, that the longer the lung is left compressed by the fluid the more likely it is to be bound down by adhesion, so as to become incapable of re-expansion. Now, although there are a few cases recorded in which extensive adhesions have formed within a few days, such cases are altogether rare, and if adhesions form so early they are usually soft and unresistant, so that they offer no real difficulty to the re-expansion of the lung when the inflammation has subsided and the fluid has been removed or has spontaneously disappeared. The two main indications for early paracentesis prove to be based on theory rather than on clinical experience.

We may, therefore, sum up the question of paracentesis in this way:—There is no reason to hesitate to perform paracentesis whenever it seems in any way indicated. At the same time, there is no necessity to be in a violent hurry if the symptoms do not suggest it. The general frequency of paracentesis is about 50 per cent., *i.e.*, in cases of pleuritic effusion now-a-days about 50 per cent. will require tapping. Of the 200 cases from St. Bartholomew's Hospital 92 were tapped = 46 per cent. Of 50 cases under my own care 27 cases were tapped. Of the latter 2 were tapped twice and 3 three times. This agrees exactly with the larger figures from the Hospital records, in which 10 per cent. also required more than one paracentesis.

Contra-Indications for Paracentesis:—I really do not think there are any.

(1) *Fever.*—In many cases that come under observation the temperature is normal, for the effusion has existed some little time and the febrile stage is passed. In acute cases where the temperature is still high the operation may be performed safely if necessary, but the temperature is not usually materially affected in any way by the operation. It is quite unusual to see the temperature drop after paracentesis for serous effusion in the way it often does after the paracentesis for empyema, yet it may. Usually the fever continues for a time much as

water, yet surely a temperature below that of the body should not be destructive of the immunising and curative substances.

This is the third case of tetanus in which I have assisted in the serum treatment (including one in which the Tizzoni-Cattani serum was used), and in no case did it exercise the slightest effect on the subsequent course of the disease. They were, it is true, all three most severe cases, but these severe cases are just the ones that the serum treatment must eventually stand or fall by. Whether it would be possible to inject the serum without untoward effect direct into the veins is a pre-eminent thought in these otherwise hopeless cases.

From many considerations it would certainly appear as if the time will come when the serum treatment of tetanus will be efficient. Within the last two years two cases of apparently severe cephalic tetanus have been thus successfully treated. Caretti's case occurred in a woman, aged 44. The incubation period was only five days. The temperature was once 102·4°. There was no pharyngeal spasm. Improvement set in immediately after the injection. In Giusti and Buonaiuti's case there was no facial paralysis, but there was facial spasm. It was typically a case of hydrophobic tetanus so far as deglutition spasm was concerned. The pulse rose to 140 to 150, and the temperature to 104°. Improvement set in within thirty-six hours of the commencement of the treatment. Sixty c.cm. horse and 110 c.cm. dog serum, as well as 20 g. of precipitated serum, were used in this case. The incubation period was long; some suspicious symptoms, however, appeared the day after the injury, but the disease did not really proclaim itself for three weeks. In both these cases the serum was obtained from the Bologna Institute, and Tizzoni himself took part in the treatment of the latter one.

The use of the serum as a prophylactic has been advocated from several quarters of recent times. It would certainly appear to be a wise precaution, and one would not hesitate to recommend it in cases of ragged wounds about the orbit if such had been contaminated with earth, or had been inflicted by an instrument which had been in contact with earth. Quite a number of cases of ordinary tetanus have been seen in the district of Leeds and neighbourhood within the last few years. A short time ago I recorded a case in the *Medical Chronicle*, 1893, which occurred in a house not so very far distant from the one in which the present case of cephalic tetanus was observed.—*British Medical Journal*, *February* 8, 1896, *p.* 321.

[Dr. John R. Hamilton refers (*Ibid.*, Feb. 28, 1896) to a case of cephalic tetanus occurring in his practice in a man aged 45, and ending in recovery. This patient was treated with very large doses of chloral.]

8.—QUININE AS A PROPHYLACTIC IN MALARIA.

By George Thin, M.D., St. And.

I have been engaged for some time in collecting evidence which may serve to indicate the best method of using quinine as a prophylactic against malarial fever, and also the amount of reliance which may be placed upon it to prevent attacks in persons who are temporarily exposed to the action of the malarial poison. I am not yet prepared to write fully on the subject, as I hope to do later when the evidence available has become larger; but the presence of an unusual number of Europeans on the West Coast of Africa suggests to me the utility of bringing the matter, without further delay, prominently before the notice of medical men in practice in malarial countries, and more particularly in Africa. My attention was first awakened to the subject some years ago by my friend, Mr. Davis, Inspector-General of the Royal Navy (retired), who told me that nearly forty years ago he was in medical charge of a small body of sailors who were sent on service up one of the rivers on the West Coast. He caused five grains of quinine to be given to every man daily, and although they were exposed to malarial miasmata of the worst kind for about three weeks, every man escaped fever except an officer who declined to take quinine. Valuable evidence of the same kind will be found in the Statistical Report of the Health of the Royal Navy for the year 1856. It is there stated that the *Bloodhound* steamed in March about 200 miles up the Benin River. While in the river, and for fourteen days after leaving it, from three to six grains of quinine were given to each of the ship's company as a preventive of fever, and although they were exposed to the emanations from the swamps for twenty-seven days only six suffered slightly from fever. Some time afterwards they were again exposed to miasmata in the Bonny, New Calabar, and Sherbro Rivers, the last one of the most dangerous rivers for Europeans in the whole station, but quinine in solution was invariably used as a prophylactic and with good effect, as only one case occurred after the vessel had been for a week on the Sherbro, the patient being the only person who did not take the quinine regularly. Boats from the Firefly, manned with white men, were sent up the River Pongas. The men took quinine wine night and morning whilst absent and continued its use for ten days after they returned, and all escaped fever. An officer who slept two nights on shore, and who declined to take quinine as a preventive, was attacked about fourteen days after returning on board. The *Merlin* went up the Rivers Bonny, New Calabar, and Brass. The men every morning took half a wineglassful of quinine wine, and this was given to the whole crew for fourteen days after leaving the rivers, in which they remained altogether about twelve days. No sickness of any kind followed the several expeditions into these notoriously unhealthy localities. The report does not state the strength of the quinine wine given, which may account for the following evidence of another kind. The *Scourge*, which was cruising on the coast on one occasion, entered Old Calabar River, and during her stay there quinine wine was issued to every person on board and no fever followed, but when at anchor off Lagos during part of the time six persons were employed inside the bar assisting to repair the *Minx*, and although, with one exception, they took quinine daily, yet after they returned on board each had an attack of fever. Four of these cases were mild and two severe. The subject of one of the latter was the person who neglected to take the quinine wine. A friend of my own, who is at present living on the Sierra Leone coast, and who had suffered from malarial fever during a previous residence, returned there last summer. From the time of his arrival he had taken five grains of quinine daily, and when I last heard from him, several months after his arrival, he had remained free from fever. A young engineer, who is at present working in a very malarial district on the East Coast of Africa, consulted me before he left England as to the best means of escaping fever while in the fever zone. I recommended him amongst other things to take five grains of quinine daily. After reaching the malarial district he took this dose regularly and has remained in excellent health for several months without a trace of fever, while the two companions who were associated with him have been so repeatedly prostrated with fever as to be most of the time incapacitated for work.

I could quote a similar and striking experience in India. We now know, of course, how quinine acts as a prophylactic against fever, and why it must be a prophylactic. The young, naked spore of the malarial parasite is extremely susceptible to the destructive action of a minute proportion of quinine in the blood, and the question to be solved, and which can only be solved by an accumulation of facts, is—What amount of quinine can the average man take daily for a certain period without prejudice to his health? For it is reasonable to suppose that the greater the proportion of quinine in the blood the less chance of the malarial spore being able to live in it. The administration of even small doses of quinine over a certain period acts injuriously on the red corpuscles, but clinical experience shows that in most cases the injurious effect of quinine, if not continued over too long a time, may be practically ignored. It seems quite certain that most people can take five grains of quinine daily over a very considerable period without any appreciably injurious effect, and if it should turn out that a dose of five grains is reliable as a prophylactic the physician would not hesitate to recommend it to all persons who have to reside for a time in malaria-stricken districts. For those whose stay in such districts is brief, and where the malarial parasite is virulent, this dose might be increased. I have been in the habit of recommending the prophylactic dose to be begun two days before the person is exposed to the action of malaria, and to be continued for ten days after he leaves the district. I prefer the solution of the powder to other forms.—*The Lancet, January* 25, 1896, *p.* 219.

9.—THE PRACTICAL VALUE OF LAVERAN'S DISCOVERIES.

By William Osler, M.D., of Baltimore, Md.; Professor of Medicine, Johns Hopkins University.

[The following is an excerpt from Dr. Osler's paper :]

Laveran's discovery in 1881 attracted for a time little attention, chiefly because the workers in pathology, the world over, had not opportunities for studying the disease. The verification of his work came slowly, while the conception of its far-reaching consequences has not filtered from the laboratories and clinics into the wide field of everyday practical medicine.

The diagnosis of Malarial Fever.—There has been an extraordinary unanimity in the verification of Laveran's main facts by every competent worker who has had suitable opportunities for the study. The extensive and complete bibliography—the most complete yet published—in the monograph by my assistants, Drs. Thayer and Hewetson, gives some idea of the widespread interest which the question has aroused. It is not too much to say that Laveran's work has revolutionised the study of fevers, as now a trained observer can determine whether any given case of fever depends upon a malarial infection. The parasites are present in all forms of the disease, and constitute a diagnostic criterion of unfailing accuracy in uncinchonised subjects. I shall refer shortly to the extraordinary abuse of the term malaria, which is used as a cloak to cover our ignorance of the nature of obscure fevers. A more extended knowledge of the fact that the malarial fevers are readily and quickly recognisable will give the physician pause in a hasty diagnosis, and will in time obviate one of the most glaring inaccuracies in the mortuary returns of certain towns.

But it is in the study of the fevers in the tropics that Laveran's discovery will prove of the greatest service, and as shown by the work of Vandyke Carter, in India, and Dock, in Galveston, the differentiation of malarial from other fevers is quickly made. It is most important that men who desire to study this problem should be equipped with the necessary technic. Several recent reports on malaria in the tropics have been sadly defective, and show that valuable opportunities have been wasted from lack of proper training on the part of the observer. Accurate information on the subject, in English, has not been until recently available. My article in the *British Medical Journal* (1887, I), remained for several years the only one which had a wide circulation, and the letters which I have received from practitioners in distant parts of the world indicate that, with the imperfect literature, there co-existed as a rule imperfect training and faulty apparatus. Now, however, the publication by the New Sydenham Society of Laveran's monograph, and of the works of Marchiafava and Bignami, of Mannaberg, and the monograph of Thayer and Hewetson, already referred to, gives access to all the available literature, and should prove a great stimulus to the study of tropical fevers from the new standpoint.

For so many generations the paroxysm of intermittent fever has stood for the type and representative of the class of fevers associated with chill that it has been, and still is, very difficult, particularly in this latitude, to avoid the suspicion of paludism in any disease associated with recurring rigors; and yet one may safely say that, in the cities of the Atlantic seaboard, the instances of chills and fever due to the malarial parasite are greatly exceeded by those of various other affections. The idea seems firmly ingrained in the mind, and I scarcely pass a week without seeing some instances in which the diagnosis of malaria has been made, simply because the patient has had recurrent chills. The error would not be so unfortunate were it not for the fact that it often causes delay in the adoption of suitable treatment, and may completely blind the physician to the true nature of the case. Perhaps the most frequent mistake is in the chills and fever of tuberculosis. As is well known, these occur at the two extremes of the disease. It is more particularly in the early stages that the mistake is serious, and I have on many occasions known a patient treated persistently for malarial fever without a suspicion having arisen that the trouble depended upon tuberculosis. In all varieties of septicæmia the mistake is most frequent. Malaria post-partum, of which one hears not a little, is very often septicæmia, and I rarely see a case of abscess of the liver that has not been drenched with quinine, in some instances for months, in the belief that it was a chronic malaria. Frequently pyelitis, pyelonephritis, gall-stones, and empyema are in the same way overlooked, and, even when the diagnosis has been demonstrated, I have often heard from physicians expressions which indicated a lingering idea that after all the septic trouble was only a consequence or a complication.

The profession at large has not yet laid to heart the following rules:—(1) That the diagnosis of the malarial fevers can be made with certainty by the blood-examination. (2) That an intermittent fever which resists quinine is not of malarial origin. *Medical News, November* 23, 1895, *p.* 561.

10.—ACUTE RHEUMATISM.

By W. B. Cheadle, M.B., F.R.C.P.

[The following remarks on the various manifestations of rheumatism is taken from Dr. Cheadle's paper read before the meeting of the British Medical Association, 1895. The importance of these various manifestations is hardly sufficiently appreciated.]

There are other affections such as pleurisy, pneumonia, bronchitis, peritonitis, cystitis, nephritis, orchitis, thyroiditis, and others which have claims to be considered as occasional or minor expressions of rheumatism, but their position is less certain, and I pass them by; rheumatism is not the chief or most common cause. The morbid developments previously enumerated, namely, arthritis, endocarditis, pericarditis, tonsillitis, erythema, chorea, and fibrous nodules, subcutaneous and periosteal, may be put down as constituting the chief members of the rheumatic series. These, let me point out, may occur in any order, and cannot be regarded as complications of arthritis, which is by no means always present or the first phase. Frequently endocarditis comes first, before even arthritis or chorea, sometimes chorea, sometimes erythema, and so on throughout.

It is not to be inferred, of course, that the morbid conditions enumerated are all of them invariably and solely due to the action of the rheumatic agency. Other causes produce similar individual effects. Arthritis is also set up by the poison of gout, by mechanical injury, by septicæmia or pyæmia. Yet the rheumatic poison is the most common excitant of articular inflammation, and the gouty or septic poison does not set up erythema nodosum, or chorea, or fibrous nodules. It is so with the other members of the rheumatic series, although not in the same degree in all. Tonsillitis, endocarditis, pericarditis, erythema exudativum, and chorea are set up by other exciting causes as well as by rheumatism, although the latter is the most potent and frequent; and these morbid phenomena in the great majority of cases are rheumatic in origin. There is, however, one manifestation of the series which is absolutely and solely rheumatic, produced as far as I know by the rheumatic stimulus only and is in no other characteristic pathognomonic—I mean the evolution of subcutaneous tendinous nodules.

Although all the different phenomena of the rheumatic series, with the exception of the nodules, may arise independently of rheumatism, certain pathological combinations of them are effected by rheumatism alone. This association or combination constantly furnishes the key to the nature of the affection. Thus endocarditis and pericarditis and pleurisy may all accompany a septic arthritis, but chorea and erythema nodosum and nodules are never met with in such connection, so that the combination of chorea or even of an exudative erythema would afford the strongest possible presumption of the rheumatic nature of an accompanying arthritis or carditis, while the evolution of subcutaneous nodules would, I think, be conclusive.

Another instructive piece of evidence as to the protean character of the affection is furnished by the rheumatism of childhood. Not only are non-arthritic phenomena much more constant than in adult life, but all these phases have a greater tendency to arise independently and apart from each other, in this resembling the successive phases of syphilis. They do indeed occur grouped together, but not infrequently the series of rheumatic events is spread out—scattered over a period of months and years—an endocarditis at one time, a chorea at another, a pericarditis at another, an arthritis at another, or two or three of these together; and yet each, even if occurring isolated or alone at the moment, is as essentially an expression of rheumatism as if the whole series had occurred contemporaneously in immediate connection with an attack of arthritis. Either the same agency is at work on each occasion, or there is a peculiarity of constitution which confers susceptibility to a group of disorders independant of each other. Long ago Graves noted that the pyrexia may be the only symptom of acute rheumatism at the moment, stamped and fixed as rheumatic by the previous or subsequent occurrence of arthritis. And so with other manifestations. A case under my observation at this time illustrates this point:—The patient was brought to me for a slight bronchial catarrh. On examining the chest I found a mitral regurgitant *bruit*, with accentuated second sound, which had never been suspected before. There had been no attack of pain or tenderness of joints, or any other symptom which could be regarded as rheumatic. The only point in the family history suggestive of rheumatism was that an uncle died of heart disease at 33, and that the father was said to have heart disease. A month later (August, 1892) chorea of the most severe kind appeared, involving complete helplessness and loss of speech. Eight months later (March, 1893) a return of chorea; still no sign of articular affection. Nine months later (December, 1893) articular rheumatism, with nodules. A year afterwards a return of both chorea and joint affections. Can there be any reasonable doubt that the endocarditis occurring first and alone, and the chorea occurring apart, were rheumatic?

Again, another case. Chorea probably accompanied by endocarditis, without sign of rheumatic arthritis. Eleven months later a first attack of joint affection. A month later a second attack of chorea, accompanied by evolution of subcutaneous nodules and erythema marginatum, followed by three relapses of chorea, fresh nodules, erythema, arthritis, tonsillitis; then finally, endocarditis with nodules, and death. Can there be any reasonable doubt that the first attack of chorea was rheumatic and that the subsequent events, separated by intervals of time, were rheumatic also?

Look, again, at this series of events in another case:—The first event—chorea attributed to fright: Ten months later chorea, likewise attributed to fright, which was probably the immediate exciting cause. No articular affection. Three months later the joints were affected for the first time, with evolution of nodules, followed one month later still by endocarditis. Then quiescence for six months; at the end of this a combination of phenomena—chorea, emotional attacks, nodules, articular inflammation, endocarditis, pericarditis, pleurisy; the pericarditis and probably endocarditis continuing until death, a few weeks afterwards. Can there be any reasonable doubt that this succession of events, beginning with chorea alone and extending over a period of nearly two years was throughout rheumatic?—*British Medical Journal, Jan.* 11, 1896, *p.* 67.

11.—SYPHILIS ACQUIRED IN ADVANCED LIFE.

By Robert W. Taylor, M.D.

Though in America and France it is generally admitted that syphilis contracted at an advanced age, as a rule, runs a rather severe course, and is frequently the cause of cerebral and cerebro-spinal lesions of varying gravity, it must be remembered that a number of German observers have reached a contrary conclusion. Thus, so sagacious an observer as the late Professor Sigmund failed to find syphilis when developed in aged persons any more severe in its course and manifestations, or to be more frequently complicated with brain symptoms, than the same disease in the earlier periods of life. Sigmund's conclusions were based on the study of 118 cases of men and women in hospital and private practice, observed during a period of thirty years. Coming from such an eminent authority, this statement seems very striking, but when it is learned that the average advanced age in women was only 45 years and in men 55 years, our surprise is much diminished. In very many patients at this age the health is strong and vigorous, and senile decay has not yet set in. In striking contrast to Sigmund's views are those of Fournier, Quinquaud and Ullmann, Rénault, Dulac, and Regoby. In general it may be said that these observers held that the advanced age should be considered as periods between 50 and 70 years of life. In these ages they saw severe forms of syphilis, and noted the frequent occurrence of cerebro-spinal symptoms. Certainly this greater latitude for observation will yield far more trustworthy clinical results than a study of syphilis in middle-aged persons will. When it is remembered that syphilis expends its morbid action largely and extensively upon the blood vessels, the fact strikes one that in old persons the severity of the attack is very much influenced by the condition of the vascular system. Upon the integrity of the patient's vessels, therefore, hinges in a large degree the greater or less severity of the syphilis. In old persons arterio-sclerosis is common, and may involve more or less of the circulatory apparatus. Instances of this involvement combined with syphilis are not at all uncommon. Besides vessel-changes, visceral lesions, general debility, and unstable condition of the tissues, and the systemic morbid effects produced by vicious habits and indulgences are undoubtedly factors of gravity in syphilis of advanced life. These reflections bring strikingly to the mind the futility of generalisations in the study of the question now under consideration. The truth is that the subject of syphilis in the aged should be yet gone over again by individualising in each case, and on a large scale, before systematic conclusions can be drawn. The force of this contention has been well brought out in a discussion before the Berlin Dermatological Society upon the relative frequency of nervous affections in old persons attacked by recent syphilis (*Berlin. klin. Wochenschrf.*, No. 25, p. 551, 1895). In eleven cases between the ages of 61 and 64 years under his care. Born observed neither benignity nor malignity in the course of the disease, and in none was the nervous system attacked. In 600 cases of malignant syphilis Lewin only observed about 10 in which cerebral symptoms were present. Lewin's statistics are almost rendered nugatory for the reason that he included cases which had only passed their fortieth year. In this discussion Renvers hit the keynote of the question when he remarked that the evolution and course of the disease were especially influenced by the condition of the vascular system. A pre-existent encephalic arterio-sclerosis, according to the anatomo-pathological studies of this observer, was largely the determining cause of brain syphilis. Cases also are certainly seen in which an hereditary unstable condition of the nervous system has seemed to be the underlying cause of its involvement by syphilis.

Blaschko, in the same discussion, stated that he had been impressed with the mildness of syphilis in old persons, and had come to think that it was due to the great vitality enjoyed by voluptuaries, who, when quite old, were capable of putting themselves in the way of contracting syphilis. Mendel, whose paper opened the foregoing discussion, thought that arterio-sclerosis was the underlying cause of the malignity of syphilis in the aged. A review of my own clinical experience has convinced me that in many elderly persons of vigorous physique and good habits syphilis runs a comparatively mild course; in less vigorous persons it is more severe; but that in poorly nourished, weakly, and under-weight individuals, in nervous, excitable, neuropathic, and over-studious (brain-workers from all causes), it is often severe and even disastrous in its effects. Further, I have observed the malignant combination of arterio-sclerosis and syphilis, and the grave effects of antecedent visceral diseases. Much further light can be thrown on this important and yet unsettled subject by the publication of well-observed cases.—*Editorial*, *Medical News*, *March* 21, 1896, *p.* 330.

12.—A SUMMARY OF SIXTY-THREE CASES OF CHLOROSIS.

By Ralph Stockman, M.D., F.R.C.P.E.,
Assistant Physician to the Royal Infirmary, Lecturer on Materia Medica and Therapeutics in the School of Medicine, Edinburgh.

Having, during the past few years, treated 63 cases of chlorosis in hospital, it may be of interest if I give a short summary of the conditions found, and of the frequency and severity of some of the chief symptoms. The notes of the cases were almost invariably taken by myself, but unfortunately were not always as full as they might have been, and hence the presence or absence of a certain symptom has been sometimes left unmentioned. I have simply entered these in the tables as "not noted," although it is most probable that the condition as found was healthy, and had nothing about it worth noting. The cases were all typical and well-marked, and all occurred in girls or young women. As most important, I shall begin with the condition of

The Red Blood Corpuscles and the Hæmoglobin.—In two of the cases I had omitted to enter the blood condition on admission, and hence only 61 are available. On admission the blood condition of these was as follows:—

Number of Patients.	Number of Red Corpuscles per c. mm.	Range of Hæmoglobin.	Average of Hæmoglobin per case.
	Millions.	Per cent.	Per cent.
6	4½ to 5	46–66	52·6
9	4 to 4½	30–60	44·8
11	3½ to 4	35–64	42·7
15	3 to 3½	22–44	33·2
10	2½ to 3	30–48	36·7
8	2 to 2½	20–46	31·6
2	1½ to 2	25–28	26·5
61			

If we take the average number of red corpuscles in the healthy young woman as about 4½ millions per cubic millimetre, and the average amount of hæmoglobin as from 80 to 90 per cent. on Gowers' hæmoglobinometer, it is at once evident that in the great majority of these cases there is a striking deficiency of red corpuscles, and in all of hæmoglobin. In every case the latter is greatly diminished, and only in six cases do the former reach their full average in health. A deficiency in red corpuscles of any amount down to two millions is common, that is to say, down to 45 per cent. of what they should be normally, while anything lower than this is decidedly rare. The highest percentage of hæmoglobin found was 66, the lowest 20 per cent., and although the number of corpuscles is no exact criterion of the amount of hæmoglobin which we may expect to find in any individual case, yet, on the whole, where there is a large number of corpuscles the colouring matter tends to be more abundant than where there are few. There are, however, many individual exceptions, as a glance at the column showing the range of the amounts of hæmoglobin as compared with the number of red corpuscles, will at once reveal. The average of hæmoglobin per case is also usually higher the more corpuscles there are; but here, too, there is no hard and fast rule, as the ten cases with $2\frac{1}{2}$ to 3 millions of corpuscles had a larger percentage of hæmoglobin per case than the 15 cases with 3 to $3\frac{1}{2}$ millions corpuscles. The hæmoglobin value of individual corpuscles ranged from ·30 to ·70 of the normal.

On discharge from hospital, 1 case had 6,300,000 red corpuscles and 85 per cent. hæmoglobin; 8 cases had over 5,000,000 red corpuscles with from 72 to 82 per cent. hæmoglobin; 18 had over 4,500,000 red corpuscles with from 40 to 78 per cent. hæmoglobin. These statistics are, however, very incomplete, as most of the cases left hospital before they could be considered as quite recovered, and were lost sight of. The corpuscular increase was always very much more rapid than the hæmoglobin increase. Within four days after commencing to take iron the former often showed an upward bound, and in ten to fourteen days had not infrequently reached its limit; while the latter progressed much more slowly, requiring from four to nine weeks usually before it could be considered as normal.

Poikilocytosis.—It is difficult to fix a standard by which to classify the changes in shape and size of the red corpuscles. Usually these are not very pronounced, and although Dr. Robert Muir (*Journ. Anat. and Phys.*, vol. xxv.) gives a drawing of blood from a case of chlorosis in which the irregularities of form are very similar to those found in cases of pernicious anæmia, yet such extreme cases are very uncommon, and one usually finds only slight alterations. In my cases most of the red discs were normal in appearance, but there occurred usually a variable number of "apple-seed" and other shapes, with many or fewer microcytes. I have therefore classified the poikilocytosis as follows:—Extreme, many corpuscles greatly altered in shape, 3; marked, many corpuscles slightly misshapen, and numerous microcytes, 10; slight, a few misshapen corpuscles, and many microcytes, 37; no alteration, 5; not noted, 8; total, 63.

Circulatory System.—Without exception all the patients complained of breathlessness and palpitation on exertion. The well-known systolic murmurs of anæmia were present in all cases except one, where no murmurs were audible. Only in 16 cases was the deep cardiac dulness accurately marked out; in one of these it was distinctly enlarged, in 2 slightly enlarged, and in the remaining 13 normal in area.

Digestive System.—The presence of constipation was carefully inquired into, and where there was a satisfactory movement of the bowels every day or every second day, the cases were noted as having no constipation. The figures are as follows:—None, 25; moderate, 19; severe, 12; not noted, 7; total, 63. Symptoms of gastric dyspepsia were very frequent, but by no means universal. They were—Absent, 23 cases; slight or moderate, 30; severe, 8; not noted, 2; total, 63 cases. Some of the patients who had no dyspeptic symptoms ate very little, however, or were extremely careful in their diet, and there can be no doubt that the great majority of them had weak digestions. The hydrochloric acid of the gastric juice was not systematically examined.

Menstruation.—The results were—No anomalies, 4 cases; amenorrhœa, 12; scanty or irregular, 29; profuse, 10; never menstruated, 3; not noted, 5; total, 63 cases. Of the non-menstruated girls, one was 13, the other two fifteen years old. Menorrhagia was actually present in 10 cases, but, besides these, 6 had previously suffered from menorrhagia, the menstruation having later on become scanty or entirely ceased.

Age.—The ages of the sixty-three patients were as follows:—13 years, 1 case; 14, 2; 15, 4; 16, 5; 17, 8; 18, 5; 19, 9; 20, 10; 21, 3; 22, 3; 23, 2; 24, 2; 25, 3; 26, 1; 27, 1; 28, 1; 29, 1; 33, 1; 35, 1; total, 63 cases. The girl of 13 was a typical case of chlorosis, although, as previously mentioned, she had never menstruated. She was neglected, and very ill-fed, and her mother stated that she was a seven months' child. Forty-nine of the cases occurred between the ages of 15 and 23, and the great majority before 21.

Number of Attacks.—Of the sixty-three cases, 27 were suffering from the first attack of chlorosis, 11 from the second, and 22 had had similar illnesses oftener; in fact, many of them were chronically anæmic, and only applied for advice when they were totally unable for their work. Most of these last cases had never had the patience to undergo treatment for a sufficient length of time to arrive at complete recovery; but when they remained long enough in hospital they recovered just as completely as the others. In 3 cases the number of attacks had not been noted. Twenty-three was the highest age at which the first attack occurred.

Occupation.—This is probably not of much importance statistically, as the occupations of hospital patients in any town must depend largely on the nature and extent of the local industries. There were 38 domestic servants, 13 factory girls, 2 shop girls, 2 dressmakers, 2 dairymaids, 3 fieldworkers, and 3 lived at home.

Duration of Treatment.—I cannot say much about this, as so many of the patients left hospital before they had fully recovered. The rapidity of improvement varies greatly also, and is very dependent on the state of the digestive organs. About four to six weeks appeared to me the usual time required in ordinary cases.

Treatment.—I have already (*British Medical Journ.*, i., 1893) recorded the results of different methods of treatment in many of these cases. Stated briefly, it was found that improvement took place only when iron was given. The form or method of administration does not greatly matter, so long as a sufficient amount of the metal becomes absorbed.—*Edinburgh Medical Journal, November*, 1895, *p.* 413.

13.—EXOPHTHALMIC GOITRE TREATED WITH ANIMAL EXTRACTS, AND ESPECIALLY EXTRACT OF THYMUS.

By Robert T. Edes, M.D.

[Dr. Edes first relates a case in a woman aged 34, and then proceeds :]

About a month after her entrance she was put upon capsules of dried thyroid, which were continued nearly another month without perceptible influence upon her condition or the secretions, urea and uric acid being quantitatively examined. Early in February she was put to bed, and given bromide of potassium in considerable doses. In May and June she received hypodermic injections of nuclein prepared from spleen, and later an extract of spleen prepared for me by Parke, Davis & Co. There was no favourable result perceived from these, but a good deal of local pain and increased nervousness therefrom. On the whole, however, during this time she gained flesh and lost in restlessness ; but the pulse was never recorded below 104, and the carotids were still throbbing with great violence. On July 15 she began to take capsules of dried aqueo-glycerine extract of the thymus gland, using most of the time three, containing each one and one-half grains, per diem. On August 5 she was feeling much better, but there was no very obvious change in the symptoms ; and on September 7 she was discharged "relieved," still taking the capsules. She was seen on November 18. She had stopped the thymusine about four weeks after leaving the asylum (because her supply gave out), and until a week or two ago had felt better. Had tried to go to work, but could not. Now her general appearance is less nervous and manner less excitable. Pulse 108, irregular. Considerable throbbing of carotids, but perhaps less than formerly. Less swelling of thyroid. Feels less restless, and considers herself much better. She was provided with capsules to take twice a day, and report when they were gone. On December 6, the pulse was 92—the first time I had ever found it at that figure, although it was taken while she was sitting up and after reaching my office, presumably by walking, while previous observations had often been when in bed. She said she was better, and considered the swelling of the thyroid less. She considered herself competent for not too laborious employment. Later I heard of her as engaged in a shop during the active Christmas season.

The number of cases of exophthalmic goitre so far reported as having been treated by thymus is by no means so large as might have been expected in these days of the popularity of animal extracts in therapeutics. It has, however, been used, and with good results, in simple goitre.

David Owen made an interesting and successful experiment with this agent, and certainly without any prejudice in its favour, for he thought he was treating a patient with exophthalmic goitre by thyroid feeding until he discovered that, by a mistake of the butcher, she had been having thymus.

R. D. Cunningham treated three cases with good results, the first two with raw or slightly broiled thymus, and the third with thymus tabloids, 12 to 15 five-gramme tabloids per diem.

Miculicz treated eleven cases of goitre, of which only one, however, was exophthalmic, with doses of 10 to 15 grammes of thymus, increased to 25, three times a week. In ordinary goitre his results were confirmatory of those of Bruns, but in the exophthalmic the good results as to nervousness, palpitation, dyspnœa and attacks of threatened suffocation were obtained without any marked diminution in the size of the thyroid tumour.

All three of these writers close their papers with interesting discussions of the physiological questions raised, and to that of Cunningham is appended quite an extensive bibliography.—*Boston Medical and Surgical Journal, January 28, 1896, p. 82.*

14.—TREATMENT OF CHRONIC RHEUMATIC ARTHRITIS.

By E. R. Axtell, M.D., Denver, Col.

We have two methods of medication which we may make use of in these cases—internal medication and local treatment. The two must always be combined to get the best results. Many drugs have been proposed in the treatment of chronic articular rheumatism, but out of the vast array of drugs proposed there are but two that give us results, and these must be continued for many weeks before benefit is apparent. These drugs are iodine and arsenic. They should be tried in every case with brief intermissions whenever they disagree. They frequently fail, just as all drugs do in these cases, but they are worth a trial. Iodine may be given in the form of the syrup of hydriodic acid, or, better still, combined with potassium. Moderate doses are sufficient. Arsenic, given in pill form—arsenious acid, one-thirtieth to one-fifteenth of a grain, two or three times—may be given with the iodine. Together they are useful drugs. Iron, quinine, and cod-liver oil are sometimes indicated. The general condition gives the indication. Many practitioners believe that our greatest aim should be to keep the digestive and secretory functions perfect. In those patients who cannot afford to separate themselves from further exposure to the predisposing and exciting causes of this disease we can do but little. In fact, they only ask our services when they are suffering with an exacerbation of their symptoms. For these exacerbations salicylate of sodium and acetate of potassium are of service, although these drugs, even in very large doses, are useless in the chronic cases. The physician who hopes to cure or palliate cases of chronic articular rheumatism without local treatment is following a poor plan, which must result in disappointment. This trouble is largely local; in fact, there is nothing to prove to us that it is anything but local; in itself it does not produce constitutional symptoms, it is not followed by cardiac disease, and physically the patient, as in this case, is just as well as he has ever been.

Counter-irritation is certainly of service; blisters and "firing" with the actual cautery will help all cases. Massage with passive motion reduces the swelling and keeps the joints supple and free from fibrous adhesions, and likewise prevents the newly forming connective tissue from binding the tendons about the joint. I regard massage as of the greatest importance. It not only lessens the inflammation, but it prevents the consequences of that inflammation from leading on to greater harm. It is particularly useful in all cases like this which are associated with atrophy of the muscles.

As an evidence of what motion can do for a crippled joint we had but to move a patient's left leg by passive motion. At the left knee and at the left hip the joint could be moved passively in flexion and extension without difficulty, but on endeavouring to move the left hip in abduction and adduction much pain was produced and much resistance felt.

Let us dwell a few moments upon the application of massage in these cases. A series of light, gentle upward strokes should be first applied to all parts of the joint, both above and below. The circulation is thus quickened, the lymph flows freely, and the lymphatics about the joint take from the joint cavity any excess of serous exudate. After working for a few minutes in this manner, deep manipulation should be made. Then gentle, firm kneading, alternating with upward friction, should be kept up for fifteen or twenty minutes. This, followed by passive motion for five minutes in all directions, will soon accomplish wonders. A flannel bandage carefully applied after this procedure will assist in promoting comfort and absorption. This procedure must be repeated many times at frequent intervals in chronic cases. The Swedish movement cure, like massage, is of great benefit in chronic articular rheumatism. It should be begun early and should be methodically persevered in. Next to massage, hydrotherapeutic measures are of the greatest service. These measures can be carried out in almost any household, and hence are of more extended service than massage, which requires a skilful operator. Simple warm baths may be used, or salt baths may be improvised (five or ten pounds of salt to the bath water). Much relief is sometimes obtained by applying cold water to the joint by means of flannel cloths covered with oiled silk. Then a simple procedure, but one which gives some excellent results, is the hot sand bath. This can easily be applied at home in most cases. A large quantity of sand is heated in an oven or on a stove, and the affected joint is then packed about with this sand.

Many varieties of local applications have been devised for use in this trouble, but they are beneficial only because of the massage which accompanies their use. In practice we cannot always omit their use, however, and I commonly order the linimentum camphoræ compositum of the National Dispensatory, to which I occasionally add opium, tincture of aconite, or tincture of hamamelis. The use of the tincture of iodine in this trouble, as well as the use of electricity, is limited. Both are of little service. The faradic current to the atrophied muscles may do much good. I have said nothing to you about a change of climate. It is not necessary for a resident of Colorado to seek a mild, dry, equable climate. We have it here. Certainly there are but few climates like it in the world. For certain cases, however, a temporary sojourn at some of our noted hot alkaline springs is useful. The famous Hot Springs of Arkansas, those of Virginia, and our own Glenwood and Idaho Springs will occasionally cure even obstinate cases. In this disease never use morphine or any narcotic if you can possibly avoid it. A large number of those who suffer from chronic rheumatic arthritis become opium-eaters.

With these measures at our command we can in almost every case oppose the progress of this dire disease, and while in some cases we are only rewarded by temporary improvement, even after long-continued and active treatment, yet we must not weary of the fight.—*New York Medical Journal*, *April* 4, 1896.

15.—THE AFTER TREATMENT OF NARCOTIC HABITUÉS.

By J. B. Mattison, M.D., Medical Director, Brooklyn
Home for Habitués, Brooklyn.

Very largely among the laity, and to no small extent in the profession, an opinion obtains that narcotic inebriety is a cureless disease. My experience, covering a quarter of a century and compassing the history and treatment of many hundred cases, has convinced me that this opinion is a mistaken one.

It is not surprising that this non-hopeful feeling concerning a continued good getting on after quitting a long-used narcotic should so largely be held. The common idea that the habitual user of opium, chloral, or cocaine is simply the victim of his own vicious indulgence, implies a damaged *morale* on the part of the patient that militates strongly against any lasting good from a strictly therapeutic endeavour.

I have held, and still hold, that this largely prevalent idea as to the etiology of narcotic inebriety—in the immense majority of patients—among the better class is a mistaken one, and that a physical necessity, not a moral obliquity, is the great genetic factor, and that a full recognition of this fact, in both active and post-active treatment of this disease, is absolutely essential to a large and lasting success. It may be said that three things imperil the permanence of their cure. They are overwork, rum, and tobacco.

In laying special stress on these, it need scarcely be said that the full repair of all health infractions that stood in causative permanent good. But granting that full repair, and that relation to the initial narcotic using, is a *sine qua non* in doing nothing remains save the entail of a narcotic abuse, many cases present in which the risk of failure pertains to one or other or all of the three causes cited. Regarding the first of these, overwork, one can easily understand why the varied and exacting demands of an active medical life should make it take first rank among causes effecting an untoward result. And in direct ratio to a premature resuming of the doctor's toil is the peril of his again falling victim to the poppy need. It may seem strange that a medical man, who, above all others, should know the disturbing effect of a long-used narcotic on functional well-being of mind and body, does not appreciate the danger of too soon resuming work. Such, however, is the fact. Of course cases occur where, from conditions beyond control, despite a full realisation of this risk it must needs be taken; but too often the lack of good judgment in not recognising the great truth that a nervous system, battered and bruised for years by narcotic excess, will not in as many weeks or months regain its pristine status, is the main reason for failure in the good work—be it never so well begun. History has repeated itself so often along this line that I emphasise this danger, and warn against it with all the energy at my command.

Alcohol lessens greatly the hope of permanent cure. No ex-narcotic habitué is safe who uses rum in any form. The question of kind or quality—mistakenly held by some—is of no import. Pure or impure, beer or brandy, wine or whisky, the risk impends, for it is the alcohol that makes the mischief. Years ago that opinion was reached, and each year has but added to this belief. And this prompts me to say that I think the use of alcoholic stimulants in the active treatment of narcotic inebriety is needless and dangerous. Needless, because success can be secured without them, and dangerous—doubly so—because they retard acute recovery and tend to create a need for continued taking which makes much less hopeful the outlook for continuous good getting on. I am well aware that the opposite idea, both in active and post-active treatment, is held by some—notably among Germans—but, guided by the lamp of my own experience, I am bound to assert my opinion absolutely and everlastingly.

Tobacco endangers recovery. This belief, though more recently arrived at, has become just as fixed as that regarding alcohol; so much so, in fact, that no applicant for my care is accepted unless he or she will agree to abandon the weed. This, it may be, is counter to the common view, but testimony and observation, reasoning and experience, have brought me to this precept and practice. If it be asked why such a radical idea governs my counsel and care in these cases, one broad, general answer is given—this: Large and enlarging experience has convinced me, beyond all question, that the use of alcohol and tobacco by convalescents of this class tends, by lowering nerve tone, special and general, to prevent that return to pristine integrity of health which makes it most largely proof against recurrence of a narcotic need. While insisting on the eminent importance of this triple abstaining during the post-active régime, care must be taken to continue all those factors which make for good during the early abstinence time. It goes without saying that favouring environment, freedom from worry, care along secretory and excretory lines, and a tonic régime, all play a large part in repairing ravages of narcotic abuse, and must be continued, if need be, for months or years; and when to these are added the special causes that make less vulnerable a post-narcotic state, we shall surely note a lasting betterment in patients' future and in professional good repute.—*The Journal of the American Medical Association, December 28, 1895, p. 1119.*

16.—CHARCOAL AS A THERAPEUTIC AGENT.

By Robert B. Wild, M.D. (Lond.), M.Sc. (Vict.),
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Owens College.

[The following is taken from Dr. Wild's Parkin Prize Essay, R.C.P., Ed. :]

Stenhouse's contention that charcoal is not an antiseptic is in entire accordance with the result of my experiments, so far as regards putrefactive organisms; instead of retarding, charcoal hastened decomposition. Neither was charcoal found to be a disinfectant in the modern sense of the word, though undoubtedly an oxidiser and decomposer of organic chemical substances, which was what Stenhouse understood by that term. It seems desirable that the text-books of Materia Medica should be worded so as to avoid the use of the term "disinfectant" as applied to charcoal, since that term is now generally understood in a different sense. Dry charcoal, as is well known, acts as a filter for noxious gases, absorbing them and oxidising them. After a time this power is lost, and the charcoal becomes saturated; probably this occurs when all the oxygen contained in its pores is exhausted and replaced by the gaseous products of decomposition.

It seems to me that too much stress has been laid upon this property of charcoal in explaining its use as a therapeutic agent, and too little stress upon its power of oxidising organic matter in solution, or even in the solid state; the result has been that charcoal is discredited—perhaps unduly—as an internal remedy, because of the impossibility of preventing it from becoming wet during, or shortly after, its administration. That this oxidising action is thoroughly carried on by wet charcoal is, I believe, shown by my experiments; and that this is more than a mere absorption of the gaseous products is, I think, proved by the fact that the putrefying fluid once deodorised by the charcoal mixed with it, did not afterwards undergo any further putrefaction; whereas the putrefaction continued unchecked when the charcoal was placed so as merely to act as a filter for the gases given off, and not in actual contact with the test solution. The change that occurred in the character of the test solution after mixing with charcoal was also significant, no such change took place unless the charcoal was in actual contact with the putrefying fluid.

The degree of deodorisation and oxidation produced by charcoal was proportional to the amount of charcoal used, and was therefore less likely to be due to a simple catalytic action than to something actually contained in the charcoal, and which was used up in the chemical processes involved in its activity. This "something" appears to be most probably oxygen condensed within the pores, and the important point for our present purpose is that it is apparently not removed by thoroughly rubbing the powdered charcoal with water. We have apparently in charcoal—whether dry or mixed with water—a powerful oxidising agent, and one which being non-poisonous can be administered in large doses.

Uses of Charcoal.—(1) Externally, as a local application to foul ulcers, or mixed with water for an injection into the rectum or vagina in cancer, or other ulcerative disease of those cavities. In certain cases much benefit has resulted from its use, especially with respect to the diminution of smell, which so often renders this class of patients difficult to treat, either in a hospital ward or in a small room. It is, however, a very dirty application if used in sufficient quantity, and for ordinary cases our present antiseptic drugs are more cleanly and more effectual, and are not likely to be superseded by charcoal. (2) Internally, in cases where there is undue decomposition of the contents of the alimentary canal, such as dilatation of the stomach, certain forms of gastric indigestion, intestinal indigestion, and other conditions where the alimentary canal contains abnormal toxic substances. Also in certain specific diseases presenting local lesions of the alimentary canal. We know that many of these, such as cholera, typhoid fever, dysentery, and certain forms of diarrhœa, are due to living organisms, and of recent years the view is more and more gaining ground that many of the symptoms in these cases are due not so much to the living organisms as to the formation of various toxic substances (*e.g.*, the typho-toxine of Brieger and Fraenkel), which exert an injurious action upon the alimentary canal, or by their absorption from it produce a more general intoxication. For the treatment of these diseases the use of intestinal antiseptics is increasing, and good results have been frequently reported. The disadvantages of this mode of treatment are, firstly, the small doses of the antiseptic drugs which can be safely administered; secondly, the difficulty in ensuring their arrival at the required part of the alimentary canal. Charcoal appears worthy of further trial in these classes of cases, for although devoid of antiseptic properties, it may act by oxidising the chemical substances formed during abnormal decomposition, or the various toxines produced by pathogenic organisms. This action may be a direct one, or indirectly through the aerobic process of putrefaction, and it is possible that a supply of oxygen may modify the metabolic processes of the pathogenic organisms themselves, and render them or their products less virulent. The power of charcoal to remove alkaloids from solutions is also worth considering, as certain toxines and ptomaines are possibly of an alkaloidal nature. Charcoal may not be a direct curative agent in cases where it is of service; it may, however, prevent auto-intoxication from the alimentary canal, and so prevent serious symptoms, and enable the tissues of the organism to cope successfully with a disease otherwise fatal. It may also be borne in mind that, as suggested by Dr. Lauder Brunton, the mechanical effect of charcoal may have some additional value either as a laxative or in removing mucus from the walls of the alimentary canal.

Administration.—Charcoal, being non-poisonous, can be given in large doses; from two to six teaspoonsful a day, gradually increased, is the quantity usually recommended. Dr. Belloc himself took 500 grammes (over a pound) in one day without bad effects. It can, at any rate, do no harm, the only evil result recorded is the rare formation of a mass causing obstruction of the alimentary canal; this can be avoided by mixing it with a sufficient quantity of water before administration.

Some patients object to taking charcoal, though it is tasteless, and it has been prescribed under other names; for example, "magnésie noir" is not unfrequently used in France, and the corresponding name of "black magnesia" is sometimes heard in England.

Many of the older writers are very particular as to the variety of charcoal used for medical purposes. That this may really be an important factor is shown by the experiments upon the absorption of gases by charcoal above mentioned; it was found that charcoal obtained from some kinds of wood absorbed much larger volumes of gas than that obtained from others. Dr. Belloc is very emphatic as to the superiority of poplar charcoal, prepared in a particular manner.—*Medical Chronicle, March*, 1896.

17.—LEVULOSE AND STRONTIUM BROMIDE IN THE TREATMENT OF DIABETES MELLITUS.

By Solomon Solis-Cohen, M.D.,
Professor of Therapeutics and Clinical Medicine in the Philadelphia Polyclinic.

There is a question of deep physiologic and therapeutic import, concerning which the data are too meagre to enable us to express a positive opinion, but which, nevertheless, deserves careful consideration. Is it advisable under any circumstances to interdict entirely the carbohydrate elements of food? We know that life can be maintained upon a diet of proteids; we know that glycogen can be formed from proteids; we know, too, that dextrose is still produced and excreted by our patients when all gross forms of carbohydrates are rigidly excluded from their dietary. But do we know that life and its processes can be as well maintained for long periods upon an exclusive dietary as upon a mixed dietary? With all our clinical data and with such experimental data as are yet before us, we cannot give an unqualified affirmative to this proposition; and therefore there are some important limitations to be made to the rule as to the strict exclusion of carbohydrates from the diet of patients with diabetes.

We should first measure, for say a week while the patient is upon ordinary diet, not only the total quantity of urine and total quantity of sugar passed, but also the total quantity of urea passed; the latter as an indication as to the wasting of the tissue. The patient should be weighed at the beginning and at the expiration of the period, and we should observe as accurately as is possible the quantity of fluids as well as the total quantity of the various food-stuffs ingested. We should likewise during this period closely observe the general and special symptoms, particularly the degree of boulimia, the degree of thirst, the apparent degree of the sense of health or ill-health subjectively experienced by the patient. Thus only can we acquire the comprehensive view of the case necessary as a basis for its future management. Then, unless there is some reason for avoiding too sudden a change, a strict diet should be instituted and similar observations made for another week. If one week is not enough, and often it is not, to enable one to arrive at a satisfactory conclusion as to the effect of diet, two weeks or three weeks should be devoted to the purpose. The longer time will more especially be necessary when the institution of restricted diet must be gradual. It is time well spent, both for the patient and for the physician. In making our observations of the urine we should always examine a specimen taken from the mixed urine of twenty-four hours; frequently the quantity of sugar in the urine of the morning differs much from that in the urine of the night; it varies, too, from day to day, so that single observations are of little value. Nor can trustworthy conclusions be based on comparison of observations taken at great intervals. The best way is to take totals for a number (seven or ten) of consecutive days, and compare such totals in two successive periods of controlled experiment.

After we have learned what are the natural fluctuations in the course of the case, and what, allowing for these fluctuations, is the effect of diet, we shall be prepared to estimate more correctly the effect of drugs or other therapeutic measures. But, before speaking of drugs, let me return to the question we were considering when the subject of the manner of taking our observations developed. If we find that, under the influence of a strict diet, the excretion of sugar is diminished, but that, nevertheless, the patient feels worse, looks worse, weighs less, exhibits in a higher degree the general symptoms of the disease, especially the polyphagia and polydipsia, while under less severe restrictions, notwithstanding the greater elimination of sugar, the patient suffers less and maintains better his strength and weight, it is surely the part of wisdom, as of humanity, to allow the practical result before us to outweigh our theories, and to permit a moderate use of carbohydrate aliments. "This question is one of the most serious that will be presented to the physician in the management of his cases of diabetes, and can be decided in each case only after a careful study of that case both in detail and as a whole. Let the presumption always be in favour of a rigid dietary, but if the facts speak with sufficient clearness against that presumption, do not hesitate to institute such modification as may seem under all the circumstances most judicious. Let it always be as slight as will serve the purpose. It is especially in the matter of bread that concessions will have to be made. Gluten bread as ordinarily prepared is a delusion and a snare: it contains considerable starch and is always unpalatable. It is better to give ordinary bread in restricted amount, say six small slices daily. With this and an occasional potato, patients will usually be content. Flour made from the soya-bean is highly recommended for the use of diabetic patients. My experience with it is as yet too limited to permit me to speak positively. The greatest difficulty lies in the preparation of the biscuit, and it will hardly answer for bread at all.

According to the observations of Kuelz, of Marburg, made more than twenty years ago, levulose, the principal part of fruit-sugar, may be taken by diabetics without causing any increase in the sugar excreted.

Levulose is not, as was formerly supposed, merely a levulo-rotary form of dextrose: it has a different chemical place, being a ketone, while dextrose is an aldehyde. This may account for its different behaviour in the system; but, however this may be, it would seem that a substance possessing a sweet taste to gratify the palate, fulfilling by its chemical relations the indication for a mixed dietary, and not only not excreted, but probably assimilated and oxidized, would be highly beneficial to diabetic patients. Until lately its great cost has prevented extended clinical observations. This obstacle has now been removed. For some six months I have been giving it to one patient, and for a lesser period to two others, with the idea of determining in how far they are capable of assimilating it; feeling that, as they belong to the class of mild cases with favourable prognosis, no harm would in any event be done. The result has been so gratifying that I now purpose administering it to the two lean patients of whom I spoke, and concerning whom I shall report at a future time. [The author then gives details of three cases treated with strontium bromide and levulose.]

And now, in conclusion, let me draw your attention a little more particularly to certain points in these cases that I could not emphasize in passing without diverting attention from the general progress. Notice first the prominence given to pruritus, and especially pruritus vulvæ, in the clinical histories. This symptom should always lead to careful and repeated search for sugar in the urine. Notice, again, that in all these cases there is an excessive excretion at times of uric acid and urates; there are the vascular and digestive disturbances that are commonly associated with the uric acid diathesis, and there is either the occasional presence of albumin in the urine or vertiginous and ocular symptoms with œdema suggestive of interstitial nephritis. I have frequently met in hospital and private practice this suggestive connection between uric acid, gout, rheumatism, rheumatoid arthritis, and diabetes. I am satisfied that what we may, for want of a better term, call uric-acid diabetes has a special place of its own in nosology, and an extremely favourable prognosis as compared with other forms of diabetes. Frequently the parents will have had gout, and the children exhibit glycosuria. It is in this class of cases that strontium bromide is especially useful. I believe that the bromine salt is preferable to any other strontium preparation, because it soothes the irritable vaso-motor centres at the same time that the alkaline base plays its part in correction of metabolism. Lithium bromide is likewise quite useful, and may sometimes be advantageously combined with arsenic. You have doubtless noted that to two of our patients we gave at one time picrotoxin, at another trinitrin. These were given temporarily and symptomatically for vaso-motor disturbances: the picrotoxin as a tonic regulator when paresis seemed to predominate, the trinitrin to relax the terminal vessels when the symptoms seemed to indicate a condition of irregular spasm. I have already spoken of the great value of these agents, and especially of trinitrin, in cases of arterio-capillary fibrosis and of contracted kidney, so that I need not now dilate further upon that subject.

It is in the obese and more especially the obese and gouty patients that strontium bromide is so useful. In the obese patients not gouty, sodium phosphate is sometimes better. In the emaciated patients, codeine phosphate dissolved in solution of hydrogen dioxide, with an occasional alkaline and arsenical course, is the line of treatment I have preferred, but I believe that treatment with preparations of the pancreas may be found extremely useful in some of these cases. The difficulty will be to determine, without actual empirical observation, as to the given case. We have instituted this treatment in the case of the young lad referred to in whom the disease has followed influenza.

Levulose may be given to the stout patients as a sweetening agent, *ad libitum.* To the emaciated patients it should be given additionally as a food in doses of a drachm or two after meals, to make the total daily quantity at least one ounce. If it were not so expensive I might advise even larger use of it.—*International Clinics*, 1895, *Vol.* IV., *Third Series*, *p.* 66.

18.—TWO CASES ILLUSTRATING THE THERAPEUTIC VALUE OF OXYGEN.

By Charles J. Macalister, M.D., Edin., M.R.C.P., Lond.,
Physician to the Liverpool Stanley Hospital and to
the Home for Incurables.

[The following is taken from Dr. Macalister's paper:]

Case 1. *Uræmic coma treated with inhalations of oxygen.*—A man, aged 39, was admitted on November 15 with Bright's disease. Two days later he became drowsy, and on November 17, 8.30 p.m., he was in a condition of profound coma, lying on his back, the eyes wide open, with pin-point pupils, all the muscles being relaxed, and the face, lips, and extremities being cyanosed. The mouth was closed, and he was breathing with loud stertor through the nostrils. The heart was beating tumultuously. The pulse was about 118, poor in tension, and irregular both in strength and rhythm. He was absolutely insensitive to pain. The œdema noted at the time of his admission had diminished, there being only slight pitting over the tibiæ. If the man had not been under observation a pontine hemorrhage might have been suspected or narcotic poisoning. It was evident that he was suffering from some poison—self-generated—which interfered with oxidation, and it was on this account that I at once inserted into one of his nostrils the rubber tube connected with a cylinder of oxygen and allowed him to inhale the gas very freely—pure oxygen through one nostril, and air through the other. The results were very striking, for the face and lips quickly became less cyanosed, and in about ten minutes he began to try to push the tube from his nose. The pulse was reduced from 118 to 96 beats per minute. The respirations became slower and free from stertor, and the pupils were less contracted. He resented the touching of his corneæ. A little later he turned voluntarily on to his side, but I could elicit no replies to questions. The opportunity was taken of his being on his side to apply a cupping glass over the loin, and the pain which this occasioned effectually aroused him. He sat up in bed and became so violent that assistance had to be obtained to restrain him. He, however, took no notice of questions, and made no attempt to speak. He presently relapsed into a drowsy condition, and the oxygen was repeated (an enema of sulphate of magnesia being given in the meantime). Ten minutes later he sat up and asked for a drink. He was now quite conscious, but continued totally blind, and complained of severe headache. There was no return of the unconsciousness, although two days later there was a threatening of it which was again averted by oxygen. The urine in the twenty-four hours measured 108 oz., specific gravity 1005, and contained one-eighth albumin, with hyaline and granular casts. On November 19 he was able to see light. The ophthalmoscope showed small hemorrhages, especially in the left fundus. The right disc was blurred, and the left disc edges were normal. I need hardly enter into all the subsequent details of this case, and it will perhaps be sufficient if I simply state that he was able to read newspaper print on November 22. On November 23 all headache had disappeared, and from this date until December 6 the albumin rapidly subsided until at length there was no trace of it, and the man left the hospital perfectly well shortly before Christmas. He was treated, so far as medicines are concerned, with intestinal antiseptics, and no food except milk was given so long as any albumin remained in the urine.

Case 2. *Morphia poisoning.*—At 11.30 on the night of October 23 I was hastily summoned to see a young woman who had taken in somewhat rapid succession eight pills, each containing half a grain of morphia. The last pill had been swallowed at 10.15 p.m.—*i.e.*, more than an hour before my arrival. Several medical men had (as is usual in these cases) been called upon, and I found Dr. Murray Moore in attendance. The patient had been able to speak on being aroused when he arrived about an hour previously, and he had with great promptitude applied mustard to the calves, chest, &c., and he had also administered one-tenth of a grain of atropine hypodermically. Hence the pupils, which were at first contracted to pin points, I found rather less than medium, but absolutely insensitive to light. Dr. Moore had observed some general bronchitis, and the temperature had been 101·4° F. I found the girl propped up in bed, breathing very slowly (about 8 per minute), and it quickly became evident that the respirations were becoming slower and slower, until they ultimately became reduced to 3 or 4 per minute, and would have ceased altogether but for the employment of artificial respiration. It is needless to say that she was absolutely unconscious. The conjunctivæ were quite insensitive, and no painful stimulation that I could inflict elicited any evidence of sensation. The face, lips, and extremities were livid, and the latter were very cold. The pulse was very frequent and feeble, but perceptible at the wrist. An interesting point was the presence of occasional slight convulsive twitching of the facial muscles and divergent strabismus, possibly the result of some thebaine in the morphia. To wash out the stomach with permanganate of potash or with anything else was out of the question, because I do not believe she could have lived had the artificial respiration been abandoned, and the operation itself would have been risky, and furthermore, the morphia had in all probability been entirely absorbed by the time I saw the case. Dr. Moore, on my taking charge of the respirations, went for a battery, and at the same time a cab was despatched for a cylinder of oxygen, which reached us about 12·30 a.m. The vulcanite tube was then pushed back to the pharynx, and the gas was allowed to escape very freely while the artificial respirations were continued. The result was that the face almost immediately became less livid, and the pulse slightly better; but what was of more importance the respirations became voluntary, and the continuance of the artificial respiration became unnecessary. She was allowed to breathe the oxygen for about ten minutes, and the tube was then removed, when the lividity gradually recurred, and it was observed that so often as the oxygen was repeated the cyanosis and respiratory condition improved, and when it was omitted a relapse occurred, so that it was determined to administer the gas at very frequent intervals. After much vigorous stimulation of the buttocks, soles of the feet, and cheeks, there appeared at 3 a.m. some conjunctival reflex, which raised our hopes, but half-an-hour later she again lapsed into a condition of deep coma. The respirations were 7 per minute and the circulation was manifestly failing. Dr. Carter was at this time called in, and at his suggestion some digitalin was injected subcutaneously. Strong coffee was also injected into the rectum. The oxygen was now given continuously. The respirations improved after this, but the extremities, although surrounded with hot bottles, were very cold, and they were enveloped in hot fomentations. At 5 a.m. our efforts were rewarded by a return of the conjunctival reflex, by some attempt being made to move the arms and legs, and by frowning, &c., when the cheeks were slapped. At 6 a.m. she was quite rousable, and half-an-hour later we were able to leave her under the charge of Dr. O'Flaherty, who at that time arrived upon the scene. Strange to say, no ulceration or bruising of the buttocks, &c., followed the very powerful flagellation which they had received—a result, perhaps, due to their being at once dressed with lint saturated with hazeline. I mention this because another case of opium poisoning which I attended with Dr. Armstrong some years ago, which was treated with about the same amount of vigour, developed very considerable gluteal ulceration after recovery from the narcosis.—*The Lancet, December* 9, 1896, *p.* 1429.

19.—SOME RECENT OBSERVATIONS ON INFANT FEEDING.

By Sir WILLIAM O. PRIESTLEY, M.D., LL.D.,
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We are all aware that the mortality of children during the first year of life is very large in all countries. In certain portions of France, not more than ten years ago, it amounted to more than 50 per cent.; at Lille, in 1850, it actually amounted to 89 per cent. Even in Paris, no longer than ten years ago, it was found by Dr. Lede to be more than 27 per cent. In this country the percentage is apparently not quite so large, but the Registrar-General's reports show a large preventable mortality, and the question for medical men to solve is, how these deaths of young children are to be obviated.

All instructed medical men now know that some form of animal milk, without the admixture of any farinaceous material, is the most suitable food for children during the first months of life; but the difficulty hitherto has been to find with exactitude the best substitute for mother's milk, and to prevent misadventures when for any reason the child cannot be suckled by its own mother. The researches of M. Budin and of his assistant, M. Chavane, have shown conclusively that one of the chief difficulties in the artificial feeding of infants is in keeping the milk of the cow or other animal free from contagion of bacilli, which are always floating in the atmosphere, and which, when introduced into the digestive organs, produce green motions and diarrhœa. Milk of every kind is found to be an admirable medium for the cultivation of these microbes, and its exposure to the air for even a short time, more especially with a warm temperature, is sufficient to favour their very rapid development. The result of imbibing these organisms, even in small quantity, is that the child is seized with diarrhœa and vomiting, and these unchecked speedily exhaust vitality and extinguish life.

MM. Budin and Chavane start with the proposition, which they cannot too strongly emphasise, that of all ways of feeding a new-born infant that of suckling by the mother or by a healthy wet nurse is the safest and the best. The substitute of a wet nurse when the mother for any reason is unable to suckle her child is much more prevalent on the Continent than in Great Britain. M. Budin has charge in his maternity hospital of a department in which all the premature babies born in certain parts of Paris are brought together. Here are dozens of small and imperfectly developed infants, some being kept in *couveuses*, or incubators, to maintain their bodily temperature, and all except those suffering from syphilis or other diseases are nourished from the breast. I saw several of these wet nurses suckling two diminutive babies at the same time, one at each breast. Those whose condition rendered it inexpedient to put them to the breast were fed either with human milk, drawn previously from a woman, or on cows' or asses' milk specially prepared for the purpose. In Great Britain there is a certain prejudice, besides the difficulty and expense of providing a wet nurse, and feeding by hand is much more universal.

Most of us know something of the difficulties surrounding hand-feeding, of the small or more serious ailments which spring up in connection with it, and the constant need of prescriptions to combat these inconveniences. But all of us may not have appreciated the true causes of these inconveniences, nor understood that they represent but another link in that chain of microbic pathology which we owe primarily to the researches of Pasteur. We have rather been disposed in past times to attribute the derangements of digestion to that indefinite change in the milk which we call "turning sour," or to the casein of cows' milk being too strong for the infantile stomach, and the necessity of further dilution with water. This idea has been strengthened by observing the masses of undigested curd passed in the evacuations. When some other food has been added to the milk this perchance has been blamed for the derangement.

M. Budin's researches clearly indicate that, next to mother's milk, the milk of some other animal, like that of the ass, the goat, or the cow, and this undiluted with water but properly sterilised, is absolutely the best. As the milk of the cow is the most readily available, this is used by M. Budin, and his experiments were made chiefly with cows' milk.

Since it was discovered that various zymotic diseases have been produced by drinking infected milk, various sanitary authorities have impressed upon us as a measure of precaution the necessity of always boiling milk for household purposes, and there can be no doubt that boiling is a very effective method of sterilising milk. But boiling milk has unfortunately the effect of giving it a disagreeable taste, and it seems besides to have the effect of so firmly coagulating the casein as to render it less easily digestible for the infantile stomach. The method of sterilising milk recommended by M. Budin is to allow it to remain in a bath of boiling water for forty minutes. The apparatus he advises consists of a series of bottles, each capable of holding a child's meal, and furnished with india-rubber stoppers. These bottles are placed in a pan of water or water bath, which is kept boiling for the prescribed time. The covers or stoppers are so adapted that they allow vapour to escape during the heating process, but as the bottles cool they are drawn down into the opening by atmospheric pressure, and fit like suckers into the orifice, thus showing that they are air-tight. It is a notable fact, not generally known, that it requires a higher temperature to boil milk than water, and consequently milk can be immersed in boiling water for forty or more minutes without being itself boiled. The temperature is, however, raised high enough to disinfect it of all the commoner germs of disease, while the flavour of boiled milk is not imparted to it; indeed, the taste is little altered from that of new milk. But the additional advantage gained is that the curd of the milk is separated into minute particles or flocculi, and so softened that it does not form hard concretions in the digestive tube of the infant. It is much better adapted, therefore, for infant feeding, and is likely also to be of great use in the case of adults who have feeble digestion, or for other reasons find ordinary milk objectionable. M. Budin deprecates very much diluting milk with water, or even barley water, for infant feeding. He holds that it is much wiser, and more in the interests of the child, to give a smaller quantity of pure milk properly sterilised than a larger quantity diluted with water. In all the observations made in reference to this point he found that the greater quantity of fluid, necessitated by dilution, tended to derange digestion, while the normal and progressive increase of weight was not maintained. Always supposing that too large a quantity of sterilised milk was not given, and it was regulated in accordance with the age or needs of the child, there was no difficulty in the assimilation of the pure milk.

M. Budin insists that both in hospital and private practice the progressive well-being in the infant is best ascertained by weighing it. In his hospital the children are weighed every day and their weight is registered, so that an increase or diminution is readily observed. He has constructed an ingenious table which serves as a register. In the first column are figures in grammes, the lowest ones at the bottom, with an ascending scale. The days and weeks are indicated along the top, and thus a curve may be traced with pen or pencil, as in temperature charts. Even under normal circumstances the weight of the child drops a little during the first week after birth, but after that time it ought steadily to advance. In the charts alluded to whenever water was added to the milk there was always a little drop in the curve, showing that less nourishment had been absorbed, and a like drop was noticed if, perchance, the child had diarrhœa, or catarrh, or other infantile ailment, showing that nutrition was impaired. To make the sterilisation of milk effective, great care must be taken to exclude every source of infection from germs which may get access to the milk after the process is completed, either in the vessels themselves or in the apparatus used for feeding. Many of the misadventures were found to arise from lack of precaution in this respect. Sometimes the milk, after being duly sterilised, was again exposed for some time to the air before being used, and thus became again the medium for development of bacteria, more especially in a warm atmosphere. The Académie de Médecine in Paris does not think it beneath its dignity to express an opinion on babies' feeding-bottles, because it concerns a matter of vast importance to the community, and it has emphatically condemned all feeding-bottles with long and complicated tubes, because it is impossible to keep them clean and sterilised. Consequently they become the nidus for bacterial development, particularly at the joints. The simplest bottle, which can be scalded throughout, is the best, but there may be great difficulty in persuading poor women to adopt them, because although a siphon bottle may be the means of poisoning her baby, yet she can put it beside the child in its cot and go about her other occupations, leaving it to absorb its nourishment automatically.

If pathogenic organisms can be prevented getting access to the digestive organs of young children, one of the most fertile sources of infantile diarrhœa would be removed and the mortality from this cause greatly lessened. Sterilised milk seems in certain cases actually to be a remedy for infantile diarrhœa, for always supposing that a fresh supply of irritating organisms is not poured continuously into the digestive canal, Nature will eliminate the poison up to a certain amount, and then untainted milk is retained and becomes nutritious.

If M. Budin's deductions turn out to be correct—and he is a careful and earnest observer—the use of condensed milks may to a large extent be discarded; these have crept largely into use, and no doubt are very convenient in emergencies. They may seem to answer for a time, but in my experience they are very defective sources of nourishment, and should never be employed when fresh milk can be procured. Dr. Barlow, who has written so ably on infantile scurvy, believes that by the condensing process milk loses its antiscorbutic property, and so favours scurvy in children. This may possibly occur when milk is boiled, but the risk is minimised when it is simply sterilised and not boiled.

To sum up M. Budin's conclusions, therefore, one may say:—(1) That he regards breast milk as absolutely the best and safest nourishment for an infant, and that when a mother cannot nurse her own child the best substitute is a good wet nurse; (2) when artificial feeding must be had recourse to, cows' or another animal's milk sterilised by the method alluded to is by far the best substitute, but even when milk has been sterilised it must be guarded by certain precautions, and the simplest feeding-bottle is the best; (3) sterilised milk is best given undiluted with water, the quantity given to vary with the age of the child and other circumstances. He objects to all farinaceous forms of food during the first year of life.—*British Medical Journal, December* 7, 1895, *p.* 1401.

20.—THE TRUE AIM OF SICK-ROOM DISINFECTION.

[The following is taken from an editorial in the *Journal of the American Medical Association*:]

The London *Lancet* has attempted an analysis of the latest improvements for the practical disinfection of living rooms. In its editorial columns it is remarked that the frequency with which second and third cases of scarlet fever, or "recurrences," appear in houses that have been disinfected by the inspectors of sanitary authorities, casts grave doubts on the efficacy of procedure usually adopted, despite its official sanction. Stripping the walls, lime-washing walls and ceilings, and scrubbing woodwork and floor boards with soap and water are indeed effectual enough, and to these, when thoroughly done, we are disposed to ascribe any successful results rather than to the more technical process of so-called disinfection by sulphur fumes, which is little better than a superstitious rite or incantation. In the light of bacteriologic experiments dry sulphurous acid fumes, whether generated by burning sulphur or carbonic acid sulphide, or, as has of late become the fashion, by opening cylinders of the compressed gas, are, for all practical purposes, useless. The gas could act as a powerful germicide on articles or fabrics previously saturated with water, but its bleaching action precludes its employment in this way with coloured material, carpets or curtains, and it is as what is called an "aerial disinfectant" that it holds its ground in popular esteem. But aerial disinfection is an absurdity; no one wants to purify the foul air, which is easily enough removed by simple ventilation. In disinfecting a room the true aim is to kill the germs contained in dust on ledges or in the crevices between the boards, or adhering to the walls and other surfaces, and the dry gas is powerless to do this, which is best obtained by a sublimate solution of the strength of one part in 1,000, or by lime, not white-washing, providing the lime be freshly burnt and caustic; the carbonate of lime, or chalk, used in white-washing under the name of whiting, and into which lime is converted by long exposure to the air, being inert. The series of experiments on the infection and disinfection, by various means, of wall paper, distempers, and other wall surfaces, conducted by Dr. Kronberg, under the direction of the late Prof. Uffelmann, at Rostock, showed that subsequent scraping were invariably and almost instantaneously sterilized by washing or spraying with the sublimate solution, and equally so by the lime-wash after the lapse of twelve or twenty-four hours. The danger of corrosive sublimate is, we believe, exaggerated; since the smallest fatal dose for an adult being probably three to five grains—equal to at least a quarter of a pint of the solution—accidental poisoning with the solution is practically not probable, and, as a further safeguard, it might be coloured with indigo or "laundry blue." Carbolic acid, which is sold without restraint, and is in universal use, is more dangerous on that account, and is, indeed, frequently employed with suicidal intent and with fatal effects. In France, Germany, and Italy sublimate has nearly superseded all other disinfectants, and its neglect in this country is inexplicable. As to carpets, bedding, and clothing, all that is capable of being washed should be plunged into a copper of boiling water for a quarter of an hour, and such articles as would be spoiled by this treatment should be disinfectad by steam.

This point in reference to the powers of sulphurous acid gas, whether dry or moist, will in the future, we think, receive a fuller consideration than it has had in the past, namely, that it leads to a prolonged æration on the part of the occupant after the officials have left the premises. Here we have an ærial disinfectant that is a clear gain, supplementary and complementary, to the routine work of the disinfecting staff.—*Journal of the American Medical Association, February 8, 1896, p.* 285.

21.—ROENTGEN RAYS IN INTERNAL MEDICINE.

H. Leo (*Berl. Klin. Woch.*, February 24, 1896) discusses the probable value of Roentgen's discovery to the physician now that much has already been said of its value in surgical diagnosis. Although the trunk is too thick to allow the passage of the rays by means at present at our disposal, the apparatus producing Roentgen's rays might, as electric lamps have been, be introduced into the mouth, œsophagus, stomach, vagina, or rectum. By means of Einhorn's apparatus the stomach might be reached, a Hittorff's tube being substituted for the electric lamp. Thus one might hope to discover the presence and position of biliary calculi in the liver and bile ducts. Unfortunately in this respect Kayser has shown that Roentgen's rays pass through gall-stones almost as easily as they do through the surrounding tissues. Any attempts of this sort are, howevever, for other reasons as yet absolutely impossible; the heat produced by Hittorff's tube would be so great that, during its necessarily prolonged use, even a covering of circulating water would not be sufficient to prevent its excessive development; moreover, any faulty isolation of the apparatus might cause the sudden death of the patient. One can entertain the idea of being able to introduce a modified sensitive plate into one of the body cavities, the source of radiation being applied outside the body. Substances which may perhaps later be recognised within the body by the new radiation include gall stones (an improved method would be necessary), pancreatic calculi, foreign bodies in the internal organs, calcifications (especially in the blood vessels, the lungs and the lymph glands), urinary calculi, and pregnancies after the second month, the time at which the first points of ossification (clavicle and lower jaw) develop in the fœtus. Some new aid towards the diagnosis of stones in the kidney would be indeed welcome. Kayser has made experiments with urinary calculi of different chemical composition, and has found that they all, including the uric acid and the cystin calculi, resist the passage of the kathode rays, and appear, therefore, in the Roentgen photograph.

Huber, of Leyden's clinic (*Deut. med. Woch.*, March 19, 1896), remarks that in various swellings of the joints it may be impossible to ascertain by palpation whether the changes lie in the joint ends, in the cartilages, or in the soft parts. *Case 1.*—A man, aged 31, had a third attack of rheumatism. He had also had several attacks of gonorrhœa, from one of which he was still suffering. The photograph showed distinctly the swelling of the soft parts about the metacarpo-phalangeal joints of the middle and index fingers and also about the first phalangeal joints of the second and especially the third fingers. No change was visible in the bones. *Case 2.*—A woman, aged 41, had suffered from chronic rheumatism for two years. At first it was limited to the small joints of the hands; later the elbow, shoulder, knee and ankle joints were affected. Here the photograph showed that, although the rheumatism had existed for two years, there were no anatomical changes in the bones of the hands. Under treatment she improved considerably. *Case 3.* A man, aged 49, had suffered for three or four years from painful swellings in the fingers, due to gout. The photograph showed lateral outgrowths and irregular thickenings in the ends of the bones. In the terminal phalanges a streaky appearance was visible, due in all probability to the deposit of lime salts. *Case 4.*—A girl who had a poisoned wound of her hand three months previously, had a thickening about and loss of movement in the first phalangeal joint. The photograph explained the failure of past methods of treatment and the need of surgical assistance. The last photograph was from a patient who had suffered from gout thirty-eight years previously. It showed (*a*) large gouty nodules beneath the skin, and apparently in connection with the joints; these deposits of uric acid allow the rays to pass through fairly well. (*b*) Great changes and destruction in the joints; and (*c*) destruction of the bone. In the terminal phalanx of the ring finger it would appear as if there were a cavity surrounded by a thin wall only, the cavity being probably filled with uric acid. The removal of the uric acid in this case, either by absorption or otherwise, could only render a hitherto useful hand quite useless.—*Epitome of British Medical Journal*, 1896, *March* 14 *and April* 25, *pars.* 192 *and* 305.

DISEASES OF THE NERVOUS SYSTEM.

22.—THE SUPPLEMENTARY TREATMENT OF EPILEPSY.

By A. N. Williamson, M.D., New London, Conn.

[The following is taken from Dr. Williamson's paper :]

My experience leads me to the conclusion that the recurrence of the attack is due in most instances to preventable causes. There are three directions in which we can look for the causes of this recurrence:—(1) To the constitution of the patient and his capacity for tolerating the requisite doses of bromides necessary to control the spasm ; (2) to the condition of the digestive system ; (3) to the question of personal habits, exercise, occupation, and personal discipline. As to medication, the bromides are, from their positive value, in such general use that, in considering remedies, it is hardly necessary to refer to any other agent. Yet, in spite of this absolute value and relative success, they are held in almost universal opprobrium by the laity everywhere.

The bromides exert a powerful effect upon the system, and the physician can not do justice to the patient or to himself unless he watches the effect carefully from day to day graduating the dose to suit the varying conditions of the case. It is especially important in this disease, and, in fact, in all diseases, to become early acquainted with the exact dose required in each individual case, in order to produce the effect sought. A dose which will profoundly affect one person, will be entirely inefficient in another. It is not uncommon to see epileptics, having a tendency to mania, driven into a positive outbreak by an overdose of the bromides. In such cases it can be used only with the greatest care and in small doses, even if at all. The patient must be kept under close observation, and the remedy suspended at the first sign of mental trouble. In any case, the stage of full bromism should be avoided. If the bromides will not control the attacks until that stage is reached, we may be pretty confident the case is hopeless. It is my rule to push the dose to the point where the effect is only very slightly noticeable; mentally and physically the patient should be a little below the normal. There is no room to doubt, then, that a faulty administration of the remedy has much to do with bringing about a recurrence of the attacks.

Next to medication, and almost equally important, is the care of the digestive organs. To neglect of these organs we may undoubtedly trace a large proportion of our unsuccessful cases. General directions in this particular will not suffice. An epileptic is always balancing at the verge, ready to topple over into a convulsion at the slightest provocation; and if he has a weak stomach and poor digestion he stands little chance of obtaining permanent relief. And if we go back to the time of the first seizure, I am convinced that the one prominent factor, not only in exciting but perpetuating the attacks, is abuse of the digestive organs.

It is absolutely impossible to get satisfactory results from medical treatment if the stomach is given more to do than it can do with comparative ease. The habit of constipation is almost universal in this country, and often it is acquired in childhood. It must be overcome, one way or another, if any favourable results are to be obtained from treatment. An epileptic who is not habitually constipated is an exception. It is my rule to allow no patient to go over a day without a free movement. If necessary, an injection of tepid water is resorted to before retiring. In the matter of diet, constant watchfulness is necessary, both as to the quantity and quality of food taken. An ordinary plain diet, everything of the best, is safe in most cases, but the quantity must be rigidly restricted. Epileptics have often extremely voracious appetites, which it is fatal to indulge. Food necessary for health and strength must be given, but none merely to gratify the appetite or fancy. We can not attribute the fault to the bromide if the patient is thrown into a convulsion by over-indulgence of the appetite.

In the matter of exercise, many persons entertain the belief that exercise, carried to the point of fatigue is injurious, and likely to provoke an attack. I have not found it so. On the contrary, exercise and plenty of it is a *sine quâ non.* No patient with this disease thrives, if he is sluggish and inactive, with poor circulation and cold extremities. Those who are active, erect, quick in their movements, fond of out-door exercise and work, are the ones who respond most readily to treatment, and are the least affected by the depressing influences of the medicine. Where a patient's general health is good, he may work all day at manual labour, not only with safety but with positive advantage. In all my experience, and it is pretty large, I have never seen an attack brought on by fatigue. Constant exercise keeps the mind occupied, a very important point in this disease, stimulates the circulation, and gives a healthy tone to the whole system.

Another point looking in the direction of preventable causes of failure, is personal discipline. Epileptics are self-willed, obstinate as a rule, easily angered, and regardless of consequences; and especially need the controlling influence of a strong mind and a strong hand. Loomis says, in his "Practice," that mental impairment is not common in epilepsy. On the contrary, in my experience, it is the exception to find an epileptic whose memory, judgment, and reasoning powers are not more or less weakened. Whether young or old, as a rule, they require a master. An epileptic child stands in far greater need of strict discipline than a healthy one, for his judgment being weakened, he yields more readily to the influence of passion or to temptation in any form, and has a lessened appreciation of his fault.

In the matter of treatment and its results, it is worthy of note that the milder manifestations of the disease, the *petit mal*, yield less readily to treatment than the severe convulsions. Where the two forms coexist, it is often possible to relieve the patient entirely of the severer seizures, while the slighter ones may persist indefinitely. I have found the bromide of ammonium, in the largest possible doses, to give more relief than any other preparation. In regard to the general use of the bromides, there are some authorities who advise pushing the remedy in full doses until bromism is reached, and then suspending its use until an attack occurs, repeat the same process. It is hardly necessary to say that this course results in final failure. In the first place, as I said before, it is never necessary to push the remedy to the point of full bromism. In the next place, our object is not to stave off the attacks for a time, and then suspending the remedy, wait and see if they recur, but, on the contrary, to keep the system under constant control, with the definite purpose of prolonging the period of immunity to the furtherest possible limit. This is certainly the correct theory, if every added month gives the system additional power of resisting the onset.

Since true epilepsy depends on such a condition of the nerve centres as cannot be recognised by any means within our knowledge, we may fairly term it a habit; and, like other habits to which the system becomes habituated, the longer the period of abstention the less likelihood of a recurrence. There is no permanence in the influence of the bromides; their influence is transient, and we cannot continue the effect unless we continue the administration; for, ordinarily their controlling power is entirely gone in about thirty-six hours after their administration ceases.

As regards the relative value of the different preparations, the bromide of potassium is without doubt, singly, the most efficacious; but I have found far preferable in a majority of cases, a combination of bromide of potassium six parts, sodium two parts, ammonium one part; given always before meals, and never more than twice a day, except in those requiring very heavy doses. In cases requiring only from 15 to 20 grains daily, I administer it in one dose. In selecting the time for administration it is well not to forget the importance of interfering as little as possible with the digestive functions. It requires a strong stomach to tolerate such a dose before breakfast, and if given before retiring, a coated tongue and foul breath will commonly be in evidence in the morning.—*Journal of the American Medical Association, December* 14, 1895, *p.* 1023.

23.—NIGHT TERRORS (PAVOR NOCTURNUS).

By J. A. Coutts, M.B. Cantab, M.R.C.P.,
Physician to the East London Hospital for Children.

[The following is an excerpt from Dr. Coutts' paper on this interesting and often neglected subject:]

All the conflicting opinions as to the causation of night terrors may be summed up, it seems to me, under two comprehensive groups. In the first group may be classed the opinions that the complaint is reflex in its origin or due to partial asphyxia owing to abdominal disturbance, naso-pharyngeal trouble, or ill-ventilation of the sleeping apartment. In the second group may be classed the views that night terrors are central in origin and manifestations of present brain disturbance, and the harbingers of possible further neuroses in the near or distant future.

Keeping these two sets of opinions under consideration, I think it can be shown that the holders of them have arrived at their widely differing views of the causation and importance of night terrors from a confusion between conditions that manifest themselves by symptoms that, at first sight, bear a close resemblance to each other. Closer examination, however, should, I consider, reveal the fact that the only thing really common to these two sets of conditions, which are widely different in their gravity, is the occurrence of fright in the early hours of the night. For this confusion I fancy the name "night terrors" is largely or wholly responsible. Just as in the case of anterior poliomyelitis the name of "infantile paralysis" has led to numerous cases of hemiplegia and other infantile motor troubles being grouped under its denomination, so with night terrors the name has led to complaints with nothing in common except the presence of a night time panic being classified in the same category. Now there are, in my experience, two totally different classes of cases with the common symptom of terror arising during sleep. In the first class come cases which are fairly frequent and of little import, where the terror is reflex and due to abdominal or nasal trouble. In the second class come cases of comparative infrequency, where the malady arises from central cerebral disturbance, and is to be regarded with gravity as to both the present and the future of the patient. For the first class of cases, where the complaint is of reflex origin, I would suggest the familiar name of "nightmare," reserving that of "night terrors" for the second class, where the malady is central in origin. Such an appropriation of names is, of course, purely arbitrary, and the two might be interchanged with equal propriety; but the name "nightmare" has now gained a firm footing in medical nomenclature, and it seems to me fitting to reserve it for the class of cases that alone deserve a separate name and description.

This division of the subject that I propose has already, I fancy, been done by Silbermann. That author's classification of night terrors into those that are "idiopathic" and others that are symptomatic in origin would seem to correspond with my own, if I read him aright. Here his "idiopathic" class corresponds with my "night terrors," his "symptomatic" one with my "nightmare."

As a cardinal point of distinction between the two complaints, I would insist that in night terrors it is essential that the little patient should "see visions;" in nightmare it is sufficient that he merely "dream dreams." There are many other points of distinction, but, in attempting a discrimination between them, the last-mentioned is a fundamental one. Night terrors seldom occur in children under the age of two or above that of eight years. Nearly all writers who attach any gravity to the complaint bearing this name are agreed on this. In nightmare there are no such limits of age, and many of us are personally acquainted with the states of panic arising from troubled dreams in adult age. In a large percentage of cases of night terrors there is a history of neuroses, such as epilepsy, hysteria, chorea, &c., in the other members of the family. There is no such neurotic family history in the vast majority of cases of nightmare, although it is common enough for more than one member of a family to suffer from it and adenoids at the same time.

Infantile convulsions, in my experience, are far from infrequent precursors of night terrors in later age. There is no such relation between convulsions and subsequent nightmare that I have been able to discover. In night terror the attack generally comes on when the child is in the best of health, is quite sudden in its onset, and there is no indication afforded by which its advent is to be predicted. The children who suffer from nightmare are often the subjects of chronic ill-health from digestive disturbance or nasal troubles, and the attack is often merely the temporary termination of a sleep that, as Silbermann has pointed out, has been an uneasy one from the beginning. In the course of a night there is usually but a single attack of night terrors, although there may be several of nightmare.

Turning from these preliminaries to the actual attack it is essential, as I have stated before, that the subject of night terrors should see visions. The nature of these visionary hallucinations is one of interest, and generally presents several features of significance and importance. To illustrate this I will endeavour to describe briefly the usual sequence of events in a typical attack. The first thing that calls attention to the child is almost invariably a sudden, agonising scream of terror. On entering the room he is found, seemingly wide awake, sitting up in bed or crouching in a corner. With flushed face, and in a state of wild excitement, he converses with, or vehemently protests against, some imaginary person or thing that he sees close to him. The vision is always something of a threatening or terrifying nature, such as a horrible negro, a black statue, and the like. I have been much struck, too, with the large part the colour red plays in these hallucinations, and Gowers has pointed out the same fact in the visual auras of epilepsy, and soldiers, blood, and fire figure prominently in the accounts furnished to me by parents. Whatever be the nature of the vision, it is repeated again and again in exactly the same features in each attack, even after the passage of months in the interval between them. Although seemingly wide awake in the attack, the child cannot be made sensible of his surroundings, and generally after being laid down goes off into a deep sleep without recognising those about him. In the morning he has usually no recollection of what occurred during his sleep. Care has to be exercised in ascertaining this point, as children are apt to appropriate as their own experience occurrences that are often talked of before them, and are ready to detail them with parrot-like precision when questioned. It is not, of course, essential that all these characteristics should be present before determining as to whether a given attack was one of night terrors or not. I have, however, thought it well to give in detail the lines that are useful for guidance in this direction.

Contrasting nightmare with night terrors, I think important differences are not hard to find. In the former the sleep is often disturbed from the outset, and the attack is merely a culmination of the state of unrest. On going to the child on his crying out, he is found wide awake, and not merely seemingly so. He generally complains of some vague terror, the result of his awaking alone in the dark. If he complain of persons or things being in the room, it will be found that his fancies are merely the remnants of a troubled dream, and he does not see them in the presence of a light. The objects of apprehension, too, are generally such as he has come across in his waking moments. It is perfectly common for a child that has been terrified by a person or some animal in the daytime to have such terrors repeated in his dreams at night. In contradistinction to night terrors, the same objects of dread are not presented with unchanging fidelity, but may vary with each separate attack. Although the child may be almost demented from extreme terror, and it may take some time to soothe him from it, yet he is from the first aware of the presence of those in the room with him. When his fears are allayed, he so dreads the return of them that hours of wakefulness may be the result of the attack. In the morning he has usually a perfect recollection of the occurrences of the night.

Such are briefly the lines of contrast between two distinct complaints that I believe have been too often confounded. The one, "nightmare," is of common occurrence and of little moment in itself, but often associated with chronic ill-health in its subject. The other, "night terrors," is rare and of gravity with regard to neuroses in the future.

The similarity of the phenomena presented in what I have described as a typical attack of "night terrors" to those that take place in one of the well-recognised forms of epilepsy is not to be gainsaid. The recurrence of the same hallucinations, even after long intervals of time, the nature of the visions, the non-recognition of surroundings, and the non-recollection of what has been gone through, are features common to both. I have known more than one case where epilepsy followed upon night terrors, and I can hardly recall a case where there was not a pronounced neurotic taint in the family history of the sufferer from them. I would mention that in several cases brought to me for epilepsy I have been able to verify the former existence of night terrors. This was only brought out by inquiry, as the last complaint was deemed of so little moment that the mothers did not consider it worthy of mention in the previous histories. I have no reason either to think that my experience in this matter would be at varience with that of others with large numbers of cases of epilepsy in children to deal with, if such inquiries were considered worthy of being made.

Epilepsy, is not, however, the only, and perhaps not even the most frequent, sequel to night terrors in children. An attack of the last is only the loud proclaimant of the neurotic temperament in its subject, and there is no doubt that other neuroses, such as hysteria, chorea, migraine, insanity, somnambulism, and the like, play a large part in the after-histories as well as epilepsy. Somnambulism and somniloquence, indeed, are very close and frequent attendants on the complaint, and have been often noted in cases where epilepsy has eventually followed.

The treatment of night terrors calls for but few remarks. When the attacks are frequent and they cause distress to the relatives, I agree with the common practice of giving appropriate doses of bromide of potash. By this means, and more especially when the drug is given in the evening, the attacks can be largely held under control. If, however, the attacks are infrequent, and there is no other indication for the administration of bromide, I consider a prolonged course of the last inadvisable and possibly harmful. With the following words of Dr. Goodhart I heartily concur :—"It (night terrors) is a malady of little detriment in itself ; but as an indication of a nervous organisation it is most valuable. It is the 'slacken speed' to the engine-driver which must never pass unheeded. It is one of the smaller ailments I am always most careful to inquire for and to treat, for it is my belief that by so doing it may be possible to avert some one or other of the graver nervous maladies so common in later life." Strict attention to the child's surroundings and a careful supervision of its training, to obviate as far as possible any undue mental or nervous stress, in reality constitute the essentials of treatment in night terrors.—*American Journal of the Medical Sciences, February*, 1896, *p.* 156.

24.—TREATMENT OF SYPHILIS OF THE BRAIN.

By Charles K. Mills, M.D.,
Neurologist to the Philadelphia Hospital.

[The following is taken from Professor Mills' lecture on "Some Phases of Syphilis of the Brain":]

In conclusion, let me say a few words about the treatment of such cases as have been presented in the course of this lecture. Cases of these clinical types, if recognised early and treated actively, will often respond favourably to treatment ; cures, or at least approximate cures, can in some instances be obtained. Often the disease has produced some effects that are permanent, and even when it is arrested it is necessary to keep a watchful eye for years on the patient, reinstituting the treatment at regular periods even if no renewed evidences of syphilis are present. Many practitioners seem to hail the diagnosis of nervous syphilis with a sense of satisfaction which has underlying it a feeling that in all such cases the prognosis is good.

It is possible to remedy some of the effects of nervous syphilis or to remove some of its symptoms; it is even possible that a cure may be attained, but this, as Gowers asserts, has never been proved.

The great remedies for nervous syphilis are the iodides and mercury. Authors differ as regards their relative efficiency, most authorities believing that either or both may be efficient. Some would disregard mercury altogether in many cases. Gowers holds that on the whole the iodide is the most useful and the most certain of the two drugs; still that either may be used with success in most cases. When the iodides fail, which is very rarely if success can be obtained at all, mercury may be used successfully even for the late manifestations. The administration of large doses of the iodides, as much as from 400 to 800 grains in a day, has been called the American method. The iodides should always be given in an efficient manner. My usual plan is to begin with doses of from 15 to 20 grains three times a day, an increase by 5 or 10 grains daily until as much as a drachm or even more is taken three times daily. I have seldom found it necessary to administer more than half an ounce in a day. On the whole, the amount which has proved most successful is from 2 to 3 drachms daily. If iodism is produced, it may be necessary to discontinue the use of the drug for a time or to diminish the dose, although, strange to say, occasionally when iodism results from the use of small doses, it may be made to disappear by rapidly increasing the amount ingested. Undoubtedly in some cases from 300 to 400 grains of potassium iodide or of sodium iodide daily will be well borne, and will produce rapidly beneficial results. Of the preparations of mercury used by the mouth, calomel and biniodide are to be preferred, the former in doses of from one-sixth to a quarter of a grain every two or three hours, giving at the same time, if necessary, preparations of opium, such as paregoric or even morphin, in order to prevent looseness of the bowels. The biniodide may be used in doses of from one-twelfth to one-sixth of a grain every two hours, administering after each dose, if the bowels are affected, small doses of paregoric. The use of mercury by inunction, if this treatment can be systematically and thoroughly pursued, is one of the best mercurial methods in nervous syphilis. The official ointment of mercury and mercury oleate are the preferable preparations. From a half to one drachm can be used daily. In order to be exact as to the amount used, a good plan is to divide an ounce of the ointment into half-drachm portions, wrapping each of these in paraffin-paper. Mercurial inunctions and the use of potassium and sodium iodides may often be advantageously combined.

In Germany in particular and to some extent in this country, under the influence of the teachings of Wolff and others, mercury has been employed hypodermically and in some instances with striking success. The insoluble compounds of mercury, and especially calomel, are to be preferred.

Gowers wisely suggests that every syphilitic subject should for five years after the date of his last symptoms have a three-weeks' course of treatment twice a year, during which he should take from 20 to 30 grains of iodide daily. It is better that this rule should be adopted three times during the year instead of twice.—*Medical News, December*, 1895, *p.* 625.

25.—BRAIN TUMOUR SUCCESSFULLY TREATED BY INTERNAL MEDICATION.

[The following is taken from a Report of the London Clinical Society's Transactions. Dr. Allen Starr quotes another case in which recovery also similarly occurred. See Synopsis of this volume of the *Retrospect*:]

Dr. Althaus related the case of a lady, aged 39, in whom unmistakable symptoms of a tumour in the right central convolutions became developed in 1882. The chief signs were severe headache, cranial tenderness, and tympanitic sound on percussion, a change in her manner, drowsiness in the day-time, epileptiform convulsions, paresis of the left side of the body, with increased tendon reflexes, optic neuritis, impaired memory and inability to think, and sickness and vomiting. The first symptoms had appeared after parturition, and there was a history of a severe blow on the head many years ago, but no syphilitic infection. Treatment by full doses of mercury and iodide of potassium caused rapid improvement and total disappearance of the principal symptoms in six weeks. Several relapses happened in the course of the following years, at variable intervals, and these yielded to the same treatment as readily as the first attack. The last serious relapse occurred in 1888, and a very slight one, with few symptoms, in September, 1892. Since then the patient had remained quite well and able to enjoy life. Dr. Althaus had in similar cases seen satisfactory results from similar treatment, but the latter had generally been more protracted than in the present instance. He thought the tumour might have been a glioma, but as it was, fortunately for the patient, never seen or handled, it was impossible to determine its nature. With regard to the diagnosis, he stated that there was no other disease which would produce the whole group of symptoms which had been present, while one and all of these could be easily accounted for by the presence of a growth in the affected portion of the brain. He concluded by remarking that a case like the one related, and in which such ominous symptoms as optic neuritis, epileptiform convulsions, and loss of mental power were traced to their origin and removed by acting upon the seat of the malady, not only tended to give us confidence in our power over disease, but also furnished a very clear reply to that therapeutic nihilism which was so frequently paraded by those who did not know how to use the remedies which were at our disposal.

Dr. Walsham inquired the cause of the tympanitic note over the affected region.

Mr. Lunn recalled several cases of tumour following fractures. In one instance, after fifteen intervening years of health, fracture of the base was followed by the development of glioma in the anterior part of the cerebrum. He also cited other similar instances. It was quite new to him, however, to find glioma yielding to medical treatment.

Dr. Wilson related a remarkable case of supposed cerebral tumour or of tuberculous deposit in a boy aged 12, who had optic neuritis and exaggerated reflexes, and finally total inability to move the limbs. He grew worse on iodide and perchloride of mercury, and was then sent to the seaside, where, after four or five months, he improved, and at length made a complete recovery.

The President said the interest of the case was in the syphilitic or non-syphilitic nature of the lesion : if the latter, the case was remarkable. Did the iodide and mercurial treatment influence non-syphilitic growths? He had diagnosed cerebral tumour from very palpable signs during life, and used the treatment as matter of routine to find much improvement in the patient's state. This, however, ceased, and the patients had died, with discovery, post-mortem, of gliomata. On the other hand, when tumours were cured by this treatment, one was, perhaps, too apt to think they had been syphilitic. In the tongue hard tumours at first improved under large doses of the treatment, then the growth recurred and ran its course. Also with tumours of the œsophagus the same thing ensued.

Dr. Althaus said that syphilis could be absolutely excluded in the case he had narrated. The lady had had four healthy children and no miscarriages. He had never seen any other case of brain tumour recovered from. He had seen the association of injuries with such growths.—*British Medical Journal, November* 16, 1895, *p.* 1235.

26.—ELECTRICITY IN THE TREATMENT OF EXOPHTHALMIC GOITRE.

By Robert Newman, M.D.,
Consulting Surgeon to Hackensack and Bayonne Hospitals, N.J.;
German Dispensary, West Side, New York;
Consulting Physician to Home, Yonkers, N.Y.

[The following is taken from Dr. Newman's paper. It may be a matter of opinion as to whether there is not some more satisfactory explanation of the diminution in the size of the goitre and of the lessened exophthalmos than the one given here.—E. F. T.]

The writer has treated within the last two years three cases of Basedow's disease with apparent good results, which can be called cured. All three patients were females. The first case was a very aggravated one, who was ten years under electric treatment by one of the best authorities and practitioners in electricity. During those years, in which the life of the patient was despaired of, slow progress was made under very careful and judicious treatment. After the treatment had been suspended during a sojourn in the country, symptoms grew worse, and then in the fall of 1893 the patient came under the writer's care. It needed one year's treatment before the patient declared herself well, and she has remained so up to date.

In the third case were complications of severe oöphoritis and endocervicitis. There was hemorrhage from the uterine cavity which increased on the slightest touch, and also a profuse mucous discharge. The region of the ovary, in fact, the whole hypogastrium, was painful, and the sensitiveness was increased on any pressure. These uterine troubles have been treated locally at intervals. The only therapeutic agent given this patient has been peptonate of iron to improve the quality of her blood on account of the anæmic state, which was very marked. The iron was given when the nervous symptoms were improved, and then it acted well. The electric treatment of this case consisted of galvanism, given in different ways and places. The galvanic treatment was assisted by the spray of the static machine. The spray was given twice a week very cautiously over the spine, head, and over the sensitive parts of the ovaries with very good effect. The history of this case has been written up by the patient herself, in which is embodied notes about her mother, who died of Basedow's disease. The interest is in the question of heredity. The diagnosis in both cases of mother and daughter had been made by several eminent physicians with an unfavourable prognosis.

Electrical specialists in the treatment of exophthalmic goitre have mostly given galvanism to the sympathetic, and in this they all agree. They differ, however, in the selection of the poles, the direction of the current, the size of the electrodes, the duration of the séance, and the intervals. It seems, further, a mistake to treat solely the sympathetic system, and to overlook other important points of this disease. Most European authorities give the electric applications too short, being from one to two minutes' duration, while in America such séances are prolonged to about twenty minutes, which tires the patient and gives too great stimulation. The question arises, if it would not give better results to arrange the electric applications more rationally to symptoms and complications, as with our present knowledge neither etiology nor pathology of this disease is settled.

Beside complications and natural consequences, exophthalmic goitre has three prominent symptoms to which the treatment should be directed. These are :—(*a*) Irregular heart action, with all kinds of nervous symptoms ; (*b*) enlargement of the thyroid gland ; (*c*) protrusion of the eyeballs. Complications are anæmia, emaciation, insomnia, uterine diseases, irritability, œdema, fainting spells, &c.

The Indications for Treatment are :—(*a*) To reduce the pulse, regulate the heart action, produce rest and sleep, and allay the nervous symptoms ; beside the sympathetic system it is necessary to regulate and treat the pneumogastric and vagus. (*b*) To diminish the size of the thyroid glands. (*c*) To remove the plastic new formations behind the eyeballs. The treatment, therefore, would be :—(1) Galvanism to the sympathicus, vagus, and pneumogastric in such form as to reduce the pulse and stimulate the heart's action. In other diseases galvanism quiets to such a degree that patients fall asleep while the application is given. The strength of the current must be regulated according to the toleration of the patient in every case. The operator must exercise great care in slowly increasing the electro-motive force of the current, till the exact amperage is found, and every step of increase and decrease must be made with care and without any accidental shake or jerks of the current. The exact measure in milliamperes can not be advised, and depends entirely on the sensation in each individual case. Some patients may be so irritable that even 2 milliamperes may be too much, while others can endure 20 or even 30. It is also essential to regulate the strength of the current in the same patient, according to the region to be galvanized, to the size of the electrodes and the resistance between the two poles.

The static electricity will assist to regulate the vascular circulation, allay nervous irritation, creating a sedative to the heart, and a more refreshing sleep.

(2) The thyroid gland will be reduced with almost a certainty by the negative pole of the galvanic battery. Some report good results by applying both poles near the gland, one on each side. While this may have result, the method is harsh and not rational. Surgical means have not been successful.

(3) The protrusion of the eyeballs can only be cured by diminishing the new formations of tissues, grown behind the eyeballs, by which the eyes have been pushed forward. This can be done by the use of the negative pole to the eyes, which acts like an electrolysis, absorbing the foreign tissues. The complications have to be treated according to indications.

The static electricity is here recommended only as an assistant and must be given with care. Sparks are contra-indicated, as they are too severe, and will create often more nervousness and even pain. Breeze or spray will act well, allaying pain and regulating the circulation.

There should be avoided, too strong currents, too long séances, which tire the patient and over-stimulate internal electrolysis and surgical electricity. The faradic current has been used and recommended, given with certain precautions, but it seems it is contra-indicated, as a severe measure, which over-stimulates and disturbes more the diseased nerves.

With regard to general rules, avoid also excitement, over-exertion, stimulants, strong tea and coffee. It is evident that the treatment, and especially the application of the electricity, must be entrusted to an expert, and that the family battery for self-use (or abuse) is entirely out of the question.—*Journal of the American Medical Association*, *December* 7, 1895.

27.—NOTES OF AN EPIDEMIC OF ACUTE ANTERIOR POLIOMYELITIS.

By C. S. Caverly, A.B., M.D., President of the State Board of Health, Rutland, Vt.

[The evidence that infantile paralysis is an infective disease is accumulating. The following paper is a contribution to this view of the subject; unfortunately the bacteriological proof is still wanting. (See *Retrospect*, 1895, cxii., p. 67.) Omissions have had to be made owing to want of space.—E. F. T.].

The epidemic invaded our valley in the early summer of 1894. It prevailed with increasing severity during July, apparently reached its climax about August 1, and steadily declined until about October 1, the last case occurring early in that month. The early summer was popularly considered unusually hot and dry, though the official figures do not substantiate the former opinion. That the general sanitary surroundings and methods of living were in anywise responsible for the outbreak is also more than doubtful, since the disease showed no partiality to that class of the population whose habits and surroundings are the most unsanitary. The outbreak of which I speak consisted of 132 cases of disease in which the commonest clinical manifestation was some degree of motor paralysis of widely varying extent. There were a great many cases exhibiting rare and interesting phenomena, a detailed report of which would consume too much time. One of these, during an attack of broncho-pneumonia, had loss of speech for two weeks and paralysis of one arm which recovered in five weeks. One developed paralysis of both legs in connection with pneumonia. The paralysis in one case was confined to the external rectus of one eye. Several, after apparently recovering from the acute symptoms, were again attacked more severely than at first. Two cases, in which the legs were paralysed, had a concurrent fever with the characteristic typhoid curve. One case was that of a boy of 6 years who had been at the seashore during the summer, and returning to the town of Proctor after the epidemic was apparently on the wane, on September 5, was attacked with the typical symptoms of poliomyelitis on September 30, and is left with impairment of the extensors of one thigh and the glutei. This case is interesting as showing possibly the length of the incubation period of the poison if we class the disease among the infectious disorders.

Age and Sex.—Ninety cases were under 6 years of age; 39 were boys and 22 girls; sex of the remainder not stated. Fifteen cases were between the ages of 6 and 14; 5 were males and 6 females; sex not stated in 4 cases. Fifteen cases were over 14 years; 9 were males and 6 females. In one series of cases, 7 in number, the age is stated as between "a few months and 9 years," and the sex of none is given. In another of 5 cases, neither age nor sex is stated. It is interesting to note in this connection that there were 9 cases in adults upwards of 21 years of age. One of these was a man of 70, who had the familiar symptoms of the milder type of these cases with paralysis of both legs, which passed off in ten days. The other 8 cases were in persons from 21 to 38 years of age. These figures as to age and sex do not differ from those usually given for poliomyelitis. While it is chiefly a disease of childhood it is not exclusively so. Males are vastly more liable to it.

Immediate Cause.—The immediate apparent cause is stated in 37 instances. Of these overheating is mentioned 24 times, chilling of the body 4 times, trauma 4 times, while fatigue, typhoid fever, pneumonia and whooping cough are mentioned. There was a general absence of infectious disease as an etiologic factor in this epidemic. The element of contagium does not enter into the etiology either.

Initial Symptoms—Fever.—In most of the cases there was a perceptible rise in temperature at the start, though a few are said to have had none. Of the 56 cases in which the temperature is noted, 27 had a temperature at some time of 103°, or more, while in 26 it ranged from 99° to 103°. Three are said to have had "no fever." The duration of the initial fever, where given, varied from a few hours to two weeks. The four cases, however, that are said to have had a fever for more than a week, probably suffered from some complication or some intercurrent disease. Twenty-six cases had a febrile stage lasting from four to seven days, 7 lasting from three to four days, 6 lasting two to three days, 2 lasting one to two days, and 4 for one day or less.

Digestive Organs.—Nausea was a very common symptom, and is mentioned as occurring twenty-six times. It was often the first symptom noted, and was probably one of the commonest. Gastralgia occurred in few cases. Thirteen cases were said to have had obstinate constipation, and six had diarrhœa.

Urinary Organs.—Two cases had incontinence of urine, and in ten cases there was retention. In no case is albuminuria mentioned.

Skin.—Thirty cases are said to have had a simple erythema, and two had urticaria. There was an entire absence of herpetic and purpuric eruptions.

Nervous System.—Convulsions occurred in 12 cases, all under 14 years of age. Muscular rigidity of the neck or back muscles or both is said to have occurred in 20 cases, of which 5 were fatal. It is a very significant fact that 36 cases are noted as having hyperesthesia of the skin. Only one is said to have had any anesthesia of the paralysed member. In several instances soreness of the joints of the affected limb was a very painful symptom. Nine cases are said to have suffered from headache alone, 2 from pain in the back, and 23 from both head and back ache. These symptoms were probably commoner than the figures indicate. There was no general tendency to impairment of the special senses. Two cases are said to have had double vision, 3 strabismus, 1 was blind, and 1 deaf.

Initial Paralysis.—The paralysis, which was the leading and most common characteristic of this series of cases, occurred in 119 instances. It was located as follows:—Both legs, 69; arm and leg, same side, 10; one arm, 5; one leg, 7; both legs and one arm, 4; tongue and throat, 2; both arms, 3; all the extremities, 4; extensors of one thigh, 2; "variously in the arms and legs," 8 ; external rectus of one eye, 1 ; one side of the face, 1 ; one arm and the opposite leg, 1 ; all the extremities and abdominal muscles, 2 ; stated to have had no paralysis, 6 ; not determined, 7 cases.

Of the six cases that are said to have had "no paralysis" all had distinct nervous symptoms, explainable only on the supposition that they belonged to this epidemic. All the seven cases in which it was not certain whether they were paralysed, died early, often with convulsions, and their occurrence at this time seems to warrant their being included in this series. Of those cases that are known to have fully recovered, according to the latest information I can obtain, both legs were paralysed, 43 ; arm and leg, on same side, 4 ; one arm, 1 ; one arm and both legs, 1 ; external rectus of one eye, 1 ; one leg, 1 ; there was no paralysis in 5 cases.

That there have been more complete recoveries than this, viz., 56, is quite certain, but I have not been able to trace them.

Fatal Cases.—Eighteen deaths occurred as follows :—(1) Boy, 10 years, died within twenty-four hours with convulsions ; (2) boy, 6 years, died on sixth day with convulsions ; (3) boy, 10 months, died on sixth day, paralysed in both legs ; (4) boy 4 months, died on sixth day, all the extremities paralysed (5) girl, 11 years, died on the third day, no paralysis noted (6) girl, 1½ years, died on sixth day, no paralysis noted (7) Female, 21 years, died on thirteenth day, no fixed paralysis (8) male, 19 years, died on fifth day, both legs paralysed (9) sex and age not stated, died with convulsions ; (10) male, 21 years, died on third day, all extremities paralysed ; (11) sex and age not stated, had paraplegia ; (12) sex and age not stated, had hemiplegia ; (13) girl, 7 years, died on seventh day, all extremities paralysed ; (14) boy, under 1 year, no paralysis noted ; (15) boy, 4 years, died on second day of relapse, no paralysis of the extremities but strabismus ; (16) male, 22 years, died on third day, both legs paralysed ; (17) male, 38 years, died on sixth day, both legs paralysed ; (18) girl, 1½ years, died on fourth day.

Permanent Paralysis.—Of the 58 cases which my report left unaccounted for, I have been able to get reports of 30 which are still maimed, from six to nine months after the initial attack. Of these 16 are stated to be males and 12 females. Eighteen are under 6 years, 7 are between 6 and 14 years, and 5 are over 14 years of age. Here again we see the high percentage among the older patients. Of these 30 cases all the extremities are paralysed, 1 ; both arms, 1 ; extensors of one thigh, 6 ; glutei and lower spinal muscles, 1 ; both legs, 6 ; extensors of one thigh and one leg, 2 ; one leg, 6 ; glutei alone of one side, 1 ; one foot and ankle, 1 ; extensors of one hand, 1; both legs, thighs, and hips, 1; one arm, 2; complete hemiplegia, 1 case.

The muscular atrophy in most of these cases is marked, though combatted by the usual treatment of rubbing, massage, and electricity.

During this epidemic and in the same geographical area, an acute nervous disease, paralytic in its nature, affected domestic animals. Horses, dogs, and fowls died with these symptoms.

It was not infrequently remarked by physicians practising in this valley at the time of this epidemic that the usual diseases of children were accompanied with exaggerated nervous symptoms. Headache, convulsions, and delirium were common.

The epidemic at once assumes great importance in several particulars:—(1) From the simple fact that it was an epidemic of poliomyelitis: (2) from the great number of cases occurring; (3) from the simultaneous affectation of the lower animals.

While epidemics of poliomyelitis are not unknown or unrecorded, recent authorities speak only vaguely of their occurrence. It has not thus far found a definite place in the descriptions of this disease. The fact that poliomyelitis may occur epidemically suggests, of course, an infectious origin, a view of the nature of the disease which has only been recently discussed.

That a disease occasionally prevails epidemically suggests a specific poison, a definite toxin, and this phase of the etiology of poliomyelitis has recently received attention from foreign observers as well as from Dana, Putnam, and others in this country. Thus far, however, there does not seem to have been any substantial progress made toward isolating any specific micro-organism peculiar to this disease.

Our epidemic with that of Medin suggests, though on purely clinical grounds, the possibility of such a cause. The unfortunate absence of an autopsy in our cases, though strenuous efforts were several times made to secure them, prevents us from throwing any light on this part of the subject. That domestic animals suffered with human beings in our epidemic is a noteworthy fact, and one, so far as I can learn, hitherto unobserved. That such was the case can not be doubted. It has long been known that animals were often attacked by meningitis during an outbreak of that disease in epidemic form. Poliomyelitis has been produced artificially in rabbits and guinea pigs, but so far I have been unable to find an instance of its spontaneous occurrence simultaneously with the disease in man. This fact again emphasises the possible infectious character of the disease and lends additional interest to the epidemic here recorded.—*Journal of the American Medical Association, January* 4, 1896, *p.* 1.

DISEASES OF THE ORGANS OF CIRCULATION.

28.—DIGITALIS POISONING IN CHILDREN.

By Henry Koplik, M.D.

There are some children who are peculiarly susceptible to the effects of a dose of any preparation of digitalis. There is no drug of greater utility in the realm of pædiatric therapy, yet not one more abused, than digitalis. Physicians seem to forget that the most gratifying effects are obtained from small doses of digitalis rather than the larger quantities. There are children, however, who react in a peculiar way. Some preparations of digitalis have absolutely no effect on these children in small doses, yet when the larger dose is given, or a substitution made, as, for example, the powder replaced by the fluid extract, we have striking digitalis effects shown by the action of the heart. Our administration of the drug must be suspended. These children should never receive digitalis in any form. The drug is a direct cardiac poison to these subjects. The writer has had occasion to verify this, but will describe the effects in the cases of two children, in one of which cases there was every reason to believe that the administration of the drug was intelligent; that is, the dose administered and causing the digitalis effects had been preceded by a tentative smaller dose.

[The author then records two cases in children aged three and six years respectively; the first case was one of scarlatinal nephritis, and the second of broncho-pneumonia.]

In cases of pneumonia, such as the second here referred to, we must consider digitalis as one of our most useful drugs. But it must be administered in exceedingly moderate doses, and then only in the form of the tincture—a mild preparation as compared with the fluid extract. In this case the heart was irregular, beating 150 to start with, and under digitalis became regular, and then was not only irregular but actually at times tumultuous in its action. A constant feeling of nausea and also occasional vomiting were permanent symptoms; the pulse was irregular and dicrotic to the touch, showing a reduction rather in tension. It was irregular, 60 to 80 beats, when the digitalis effects began to wear off under treatment.

In this paper the writer desires to adhere strictly to clinical narrative and not enter into pharmacological ground; yet it will be noticed in Case 2 that, though digitalis was administered for three days in quite liberal doses, the heart continued regular and was reduced to what appeared its normal action, and only on the evening of the third day of its administration did the heart become irregular and markedly reduced in action. After the third day the use of digitalis was discontinued by the attending physician, whose suspicions had become aroused, and in spite of this fact the heart did not return to the normal in its action, even with the aid of remedies, for fully three days, when we find a record of 120 beats, which were regular.

In Case 1 we find also the administration of digitalis to have had no effect until on a change of preparation (from the infusion made from the leaves to that made from the fluid extract) the effects were shown suddenly and markedly without previous warning. The heart also took fully two days, after a suspension of the use of digitalis, to return to its normal condition.

These facts in these two cases of the sudden appearance of untoward cardiac phenomena, and their persistence for days even after the digitalis was withdrawn, seem to the writer almost incontrovertible evidence of the persisting effects of digitalis on the heart, such as is seen in the action of no other drug. The sudden onset of symptoms where none had been present for fully three days in Case 2, and the substitution of the very irregular for the regular cardiac action, are strong arguments in favour of the effect on the heart corresponding much to what experimental pharmacologists call "cumulative," but which many deny as specific to digitalis. In fact, no less an authority than Horatio C. Wood, in his address before the Tenth International Medical Congress upon anæsthesia, says, speaking of digitalis and its action on the heart already compromised by chloroform :—"The influence of injections of digitalis has been, in a number of experiments, very pronounced in producing a persistent gradual rise of arterial pressure with an increase in the size of the individual pulse rate. In several instances death was apparently averted by its injection, and I saw in one or two cases where large amounts of digitalis had been employed sudden systolic cardiac arrest, indicating that digitalis in sufficient amount is able to victoriously assert itself in opposition to chloroform. . . . I believe that in all cases of weak heart in man a full dose of digitalis before the administration of chloroform would greatly lessen the danger of cardiac collapse."

We have thus in the foregoing evidence of direct belief in a sustained action of the drug digitalis on the heart and its ganglia, and in our cases we have also clinical evidence of a regulating action of digitalis on the heart up to a certain point, beyond which irregularity and weakness result with lowered instead of high arterial tension. The reason for this action it seems might be sought in an over-stimulation of the cardiac ganglia, which responsive at first, are subsequently paralysed by digitalis. The return to the normal takes several days in spite of remedial measures.

Treatment.—I have studied the treatment of these cases of digitalis poisoning and am convinced that most efficacious has been the immediate removal of the drug, with absolute rest in bed. It is very difficult in the face of a very tumultuous and irregular heart to stand by and do nothing, so in Case 1 I used strychnine. In Case 2 the only efficient remedy seemed to be rectal injections of black coffee. Vomiting and constant nausea being present, the administration of champagne, caffeine, or sparteine by the stomach was not practicable. Both patients made a good recovery, and in future I should rely principally on perfect rest and subcutaneous injections of strychnine, and in aggravated cases rectal injections of coffee.—*New York Medical Journal, February* 8, 1896, *p.* 170.

29.—SOME OF THE USES OF STROPHANTHUS.

By W. K. Wadleigh, M.D., of Hopkinton, N. H.

The physiological action of strophanthus, generally speaking, may be said to be similar to that of digitalis, but there are some points of difference. Unlike digitalis, it has very little, if any, power to contract the small blood-vessels, in the ordinary medicinal dose. As a diuretic, it is much more sure and certain than digitalis, acting probably on the Malphigian tufts. The effect produced by strophanthus is almost immediate, though not so prolonged as that of digitalis, and it almost never produces any unpleasant stomach symptoms, no matter how long administered. This is a point of practical value, as it not unfrequently happens that the administration of digitalis has to be suspended, or even stopped entirely, on account of the derangement of the stomach, which is sometimes produced even by the smallest doses. In large doses strophanthus acts not only on the heart muscle itself, but upon the entire muscular structures of the body. In poisonous doses it will cause nausea and vomiting, and acts as a depressant to the respiratory centres, and finally causes death, usually by asphyxia.

Clinically, strophanthus may be used with more or less benefit in all cases where digitalis is indicated, not that it will do as well in all cases, but if digitalis has failed, or has had to be discontinued for any reason, we have in strophanthus a valuable substitute; but it is more especially in a few conditions in which digitalis is not so generally applicable that strophanthus finds its chief usefulness:—(1) Among aged people generally speaking, I have found strophanthus to give much better results in almost every condition where this class of remedies is indicated. In old age we often find an atheromatous condition of the arteries; and although digitalis may not be positively contra-indicated, in all such cases it is very apt to do little good, and sometimes may even do harm. (2) In vertigo of aged people caused by cerebral anæmia or by a lack of balance between the different parts of the circulation of the brain. This is something we find very little about in the books, and it is a condition in which I have been able to do much good with strophanthus. (3) In angina pectoris. My experience with strophanthus in this disease has led me to believe that it will benefit a larger number of cases than any single remedy we possess. (4) In general anæmia and chlorosis when accompanied by weakness of the heart, as so often happens in these diseases, it not only gives great relief so far as the heart symptoms are concerned, but, by sending more blood to the tissues, increases their nutrition in this way. It is often an advantage to combine it with nitro-glycerine in anæmia. (5) In the so-called irritable heart characterised by palpitation on slight exertion, more or less pain in the region of the heart, often quite severe, weak, quick pulse, sometimes intermitting, but with no organic disease of the heart present. In this condition we may give strophanthus with almost an absolute certainty of deriving benefit from its use.

I have been using strophanthus now for about seven years, and during that time have given it in a good many cases, and in fact I consider it one of the most useful remedies we have.

The best preparation of strophanthus is the tincture prepared from the seeds. The dose given is one to ten minims; it is rarely necessary to give it in larger doses than five drops, three or four times a day.—*Medical News, March* 14, 1896, *p.* 293.

30.—NAUHEIM AND THE SCHOTT TREATMENT OF DISEASES OF THE HEART.

(1) By ROBT. L. BOWLES, M.D., F.R.C.P., Consulting Physician to the Folkestone Hospital, and

(2) By H. NEWTON HEINEMAN, New York.

[The Schott treatment still continues to be the subject of much discussion in medical journals. Favourable opinions upon its effect are very generally expressed. The following excerpts are taken from papers read before the London Harveian Society and reported in the *Medical Press and Circular, April* 1, 1896:]

(1) Dr. Bowles first referred to the revolution which had taken place in the public mind on the subject of rest in the general treatment of diseases of the heart. While at Nauheim last year he had ample material and every possible kindness and assistance from Dr. Schott and Dr. Heineman. These gentlemen never attempted to influence his observations in any way; indeed, they insisted that he should take his own course and judge for himself. He directed his attention strictly to main points:—(1) Was it possible to reduce the size of a dilated, enlarged, and diseased heart (*a*) by baths, (*b*) by exercises? (2) Was this reduction, if produced, beneficial, and could it be rendered permanent? (3) The state of the heart before and after a course of treatment. It was of the first importance to define well the size of the heart and its relations before and after baths and exercises, and before and after a course of treatment; these points were the subject of careful experiment. Cases of all these conditions were related, and tracings shown of the actual relations of organs at the time of the respective observations.

Case 1.—Mr. L., a Russian. Chronic myocarditis, with marked dilatation of both ventricles, slight effusion into both pleural cavities, general anasarca albuminous urine, suspicion of incipient tabes, heart much enlarged, apex beat 5½ centimetres left of the nipple, area of cardiac dulness enormous. After twenty minutes' exercises remarkable diminution of area of heart dulness and shifting of its apex 2½ centimetres nearer to the left nipple and 1 centimetre lower down. This was distinctly appreciable to the finger. After a month's treatment all signs of dropsy disappeared, the albumen had gone, the area of cardiac dulness was normal, the patient could walk freely uphill, and said he felt perfectly well.

Case 2.—Before bath of 10 minutes. Marked mitral stenosis, with extreme dilatations of auricles; a previous history of rheumatism and pleurisy. Apex beat 8½ centimetres to left of nipple, after bath only 5½ centimetres distant, and slightly at a higher level. The general area of dulness was also considerably reduced.

Case 3.—Rheumatism in the preceding winter. A young girl, aged 14, stenosis and insufficiency of the mitral valve. She had been treated at Nauheim by a medical man for two months by baths alone, and was no better; then, under Dr. Schott, she was treated with baths and gymnastics, the local conditions were very much improved, the marked dyspnœa and all precordial pains disappeared, and she considered herself perfectly well. Before an exercise of 15 minutes the apex beat was 4½ centimetres to the left and below the nipple; after the exercise it was only 2½ to the left and below.

Case 4.—Fifth season at Nauheim, generally much improved, area of dulness normal, apex beat 4 centimetres below and just to inside of nipple line; after six movements of the exercises apex was distinctly felt 2 centimetres nearer median line. *Diagnosis.*—Aortic stenosis and slight mitral regurgitation.

All the cases now reported had been of the most unpromising type and carefully treated by the best physicians before going to Nauheim, and all those, which the author had observed there, made surprising improvement in the general symptoms and in the recovery of compensation. Great stress was laid on the point that such immediate and prompt changes are not ordinarily to be expected after a single sitting or a single bath, nor ought they to be sought for, as they may mislead the doctor into using stronger efforts than would be wise; the improvement should come about gradually and in its own proper times.

Another point to be remembered was that the bath treatment especially gives rise to quite a degree of weakness, which is often very discouraging to the patient and leads him to believe that he has received no benefit. To the physician the disappearance of the bad signs, such as œdema, dyspnœa, and the changes in the heart, afford sufficient indications for him to recognise how his case is progressing.

(2) Dr. Heineman remarks that the result of the treatment in a given case, however successful it might be in the end, does not by any means manifest itself after a single bath, or after a single application of the muscular exercises. Often a week, or even a fortnight, of treatment may be required to effect changes in the heart that are beyond any doubt. In determining these changes I have made use of the following precautions:—Percussion of the heart, its relative and absolute dulness (flatness); the determination of the level of the diaphragm; the lower border of both lungs, laterally and posteriorly; the upper and lower limits of the liver, more or less often even the upper and lower limits of the spleen; the circumference of the chest in the sub-axillary and sub-mammary lines, the circumference of the abdomen; and occasionally the antero-posterior diameter and transverse diameter of the thorax; all these being made both before and after the treatment. When all these precautions are taken the fact of the diminution in the size of the heart still remains. The direction of this diminution depends upon the condition of the ventricles and auricles. Sometimes the auricles, at times the right ventricle, again the left ventricle, manifest this diminution most markedly, but occasionally it is uniform, though this is comparatively rare. The maintenance of this diminution is a matter of interest. As a matter of fact, we find that by the following day, before

the renewed treatment, it has been lost for the most part, but something remains, and to this is added the improvement of the succeeding treatment. On the morrow, again, we have a diminution of the total gain, though the permanent remainder is greater than it was upon the previous day. In this manner the diminution proceeds towards a more or less complete recovery of compensation. Occasionally, however, as the result of indiscretion on the part of the patient, sometimes from the nature of the case itself, a relapse occurs which permits the heart to go back to its original size before treatment, sometimes even a little beyond this, but this is almost always recovered from within a short period of time (requiring medicinal aid at times, however), but ultimately all goes well, and the improvement referred to ultimately takes place.

Indications.—It is fully recognised that many cases of heart disease require treatment for the heart condition, likewise the association of a disordered stomach, or liver, or other slight intercurrent ailments are often sufficiently well treated when this secondary disease is alone disposed of. So far as the nature of the valvular lesion is concerned, these afford less certain indications for the application of this treatment than does the condition of the heart muscle itself, to wit, the question of the degree of myocarditis, and more especially the amount of loss of compensation.

Contra Indications.—Arterio-sclerosis when in an advanced stage; aneurism in every but its initial stage, acute Bright's disease and the atrophic form of chronic Bright's disease.

Indications from Condition of Patient.—In feeble patients or in cases in bed, moderate exercise may be administered with decided benefit, until by this agency, with possibly the aid of medicinal agents, the patient is able to be up. The question of bath or exercise, or both, must always be determined to some extent from the nature of the individual case.

Prognosis.—I have seen numerous cases which have been enabled to return to Bad Nauheim every summer for periods of from three to ten years. In many cases the patient who was on the point of giving up his ordinary occupation has been enabled to continue in it for many years, simply as the result of this treatment. While in Berlin this winter the courtesy of Geheimrath von Leyden enabled me to apply the exercises daily for a period of nearly three months to a number of cases. Unfortunately the cases were of the kind that come under the category of those contra indicated. But as the Charité Hospital afforded no others I proceeded in my work with the idea that if any improvement, even temporary, could be effected it would imply so much more for the cases properly suited for the treatment. I am happy to say the results exceeded my expectations.

General Remarks.—The treatment should not be considered *ab initio* a panacea for every case of heart or circulatory disease but there are few forms of this disease, of which some cases will not, more or less often, receive greater or lesser benefit. If we always keep in mind exactly what we may expect in cardiac disease, this plan of treatment will more than fulfil our anticipations.

In the discussion which followed, Dr. Bezley Thorne said that he could not be surprised at the scepticism with which the merits of the Schott methods are regarded by those who have not themselves enjoyed opportunities of observing their demonstrable results. The names of Broadbent, Grainger Stewart, and Saundby had been mentioned. Those physicians and scientists had each one approached the subject in a spirit of reasonable and scientific unbelief, and, in the event, had become converts and advocates. He himself had been a sceptic of the most advanced order, for he had been, in the first instance, unable to accept the evidence of his senses, but he had been compelled to yield to the persuasive eloquence of striking results.

Dr. Wethered said that about two years ago he paid a visit to Nauheim, and was much astonished by the results of the special treatment for chronic cardiac disease which he saw there. He (Dr. Wethered) fully corroborated the remarkable statement made by Dr. Bezley Thorne that all forms of chronic heart disease derived benefit from the baths and exercises. But it was a little difficult to answer the question asked by a preceding speaker as to what cases proved most successful under treatment, because it all depended upon what was meant by "successful." If "cure" was meant, a large number of cases sent to Nauheim were unsuccessful; but if "relief," and often very great relief, was synonymous with successful, then nearly all cases were successful. He had seen cases there which in England would have been regarded as hopeless, and in which digitalis and all ordinary treatment had been tried in vain, yet under the Nauheim treatment the improvement was marvellous; but as soon as the treatment was discontinued these patients began to relapse. Yet some of the worst cases during the months they were at Nauheim seemed to reap sufficient benefit to carry them over the winter months until they could return to Nauheim and receive a new lease of life. He considered that, in a great measure, the success at Nauheim depended upon the strict *régime* which the patients were compelled to follow. If patients in England would consent to submit themselves to the same rigid rules of life he saw no reason why the treatment should not be adopted in this country, more especially with regard to the exercises, but they were useless unless properly carried out for some time. He thought the cases which were most suitable were those of dilated heart, without valvular mischief, and neurotic cases, although many cases of valvular disease obtained much benefit. Cases of Graves' disease were not so satisfactory.

Dr. C. W. Chapman doubted the possibility of so accurately defining the variations of cardiac dulness, as the drawings we were accustomed to see in papers on the Schott treatment would appear to indicate. He pointed out the fallacies in auscultatory percussion, and stated that the note varied with the distance between the chest piece and the part struck, irrespective of what was beneath, and that firm pressure on the chest piece made sometimes a difference of a semitone. He remarked on the toning down by the last two speakers of the optimistic view of Dr. Bezley Thorne.

Dr. John Broadbent agreed that one of the important contributing agents to the beneficial results obtained in the treatment of heart disease at Nauheim was the regular routine life led there, with freedom from worry and excitement of all kinds. While admitting that the treatment by baths and exercises was of great service in suitable cases, he wished to protest against the idea that it was advisable or beneficial in all varieties of morbus cordis, or that equally good results could not be obtained by other methods in many cases. He instanced the rapid recoveries that take place every day in hospital as a result of rest and suitable treatment, by mercurial purgatives and digitalis, in cases of valvular disease where compensation has broken down in consequence of overwork or imprudence on the part of the patient, or in consequence of an intercurrent attack of bronchitis. He had not found the Schott treatment of service in advanced cases of valvular disease with complete failure of compensation where drugs and rest had not been of avail to alleviate the symptoms; nor did he consider it safe or advisable in cases of aortic regurgitation of any severity, as he had twice known of syncopal attacks occurring while the patient was in the bath. He thought that its employment was indicated in mitral disease, more especially in mitral stenosis, when compensation has not actually broken down, but is maintained with difficulty; in such cases digitalis, though it might for a time appear to do good by increasing the energy of the systole of the right ventricle, was not of permanent or real service. One such case he had known to derive great benefit from a visit to Nauheim. He also thought that the Schott treatment was often of service in cases of tachycardia or of loss of tone of the heart after influenza, but he deprecated its employment in cases of cardiac dilatation, the result of overstrain from football or rowing, in young adults, for they would recover without it by abstaining from violent exercise; in fact, in such cases, gentle walking exercise had the effect of bringing in the apex of the heart in the same way as the Schott movements and had similar good results. He thought its employment in such cases, and in the case of many of the numerous class of patients who complain of a "weak" heart, was inadvisable, as a regular course of treatment ostensibly for heart disease would be liable to make them nervous and over anxious in the future, and encourage a tendency to cardiac hypochondriasis.

31.—THERAPEUTICS OF HEART DISEASE.

By Professor H. C. WOOD.

Dr. Wood points out that practical skill in treatment of heart disease rests on the power of deciding, not whether this valve or that is diseased, but whether the increased power of the heart has or has not kept pace with the increased work of the heart. There are some who think that digitalis should never be given in aortic disease, but it is not a question of which valve is diseased, but a question of the relation of work to power. We require from the very beginning to guard against the failure of development of compensatory hypertrophy.

Dr. Wood then draws attention to the fact that, next to the lungs, the liver is the organ which feels the excess of blood in the venous system due to failing heart. Hence mercurials are of value in heart disease, to relieve the engorgement of the portal circulation. Mercurial purges and corrosive sublimate, in small doses of one-fiftieth to one-hundredth grain, given continuously for a long time, along with tincture of the perchloride of iron, aid the heart tonics in a marvellous manner.

Dr. Wood then insists upon the necessity for cardiac rests, and doubts the value of cardiac gymnastics, mountain-climbing, &c., in true heart failure. He does not think adonidine, cactus, convallaria, or other of the newer remedies of any real value, and has never had any satisfaction in the treatment of real heart trouble with any other cardiac drugs than nitro-glycerine, strophanthus, and digitalis. Nitro-glycerine dilates the vessels, and lowers the arterial pressure. It has probably a momentary stimulant influence on the heart muscle, but if the dose is exceeded in the slightest degree this stimulant action passes at once into one of intense depression. Nitroglycerine acts only for a short time, so it should be given in small doses and at short intervals. It is only useful in the crisis of the attack, and is especially efficient if the attack takes the form of angina pectoris. It probably acts by relaxing spasm. Strophanthus is a muscle poison. The heart is more susceptible to its influence than the voluntary muscles, so in using the drug we get a stimulant effect on the heart before it acts on the other muscles. There is no reason to think that, like digitalis, it acts further as a tonic than as a stimulant. It is more distinctly diuretic than digitalis, much more prompt in its action, but less permanent. Digitalis elevates the arterial pressure by contracting the arterioles, both by stimulating the vaso-motor centre in the medulla and by its direct action. But it acts more powerfully on the heart, producing a full, strong beat. It also stimulates the pneumogastric nerve. It increases the interval between the beats, and each beat is a big one, filling the arteries and forcing the blood into the coronaries, which in the failing, over-worked heart, get little or no blood. Thus digitalis causes the heart to get more nourishment, whilst the energetic muscular contraction squeezes out the effete material from the heart walls. In this way digitalis is a heart tonic.

Dr. Wood believes that by stimulating the pneumogastric—the trophic nerve of the heart—it not only quietens the heart into long diastoles, but it hastens the upbuilding of the heart structure.

Dr. Wood does not think the preparation of digitalis used of much consequence, provided it has been made from a good drug. The better results supposed to have been obtained from the infusion are due to the larger proportionate doses. In acute endocarditis digitalis is rarely indicated; aconite and similar drugs should be employed. But as soon as the acute stage has passed, it is absolutely important to begin the use of digitalis in small doses, given with great watchfulness. In some cases very large doses of digitalis have a pronounced and beneficial effect where smaller doses have failed. In some cases of mitral insufficiency, with exceedingly weakened auricle, the heart cannot stand digitalis, which seems even to make matters worse. For this condition nothing can be done.

Dr. Wood gives an emphatic warning against the use of digitalis in cases of aneurism, believing it to be an exceedingly dangerous drug, and that the reason more cases of aneurism have not been killed by it, is that it is often given in doses too small to have any effect.—*Atlanta Medical Journal, October*, 1895. (Abstract by Dr. Coutts, in the *Medical Chronicle, January*, 1896.)

32.—A SYNOPSIS OF THE MODERN TREATMENT OF CHRONIC CARDIAC DISEASES.

By William H. McEnroe, M.D.

[Dr. McEnroe's paper concludes with the following :]

There are two remedies always required in every case of heart disease, *i.e.*, oxygen and iron. The amount of iron in the blood determines the amount of oxygen carried to the various tissues of the body. All the active tissues and organs require a definite amount of oxygen for the discharge of their various functions; but the muscular system is solely dependent on oxygenation for its development and activity. The muscles are the moving-instruments of bodily mechanism, and therefore carry on the circulation. The nervous system may regulate the circulation, but without the former the latter could not act at all. The circulation—arterial, venous, and lymphatic—is dependent on the amount of muscular power developed by the heart, arteries, capillaries, and veins ; and when it fails and congestion takes place it is due to the failure of the muscular apparatus of the heart. Oxygen is the motive power of the muscles, and muscular power depends on the activity of our breathing; muscular power, therefore, is in direct proportion to the efficiency of the respiration. Respiration and its influence on muscular action is in direct proportion to the amount of oxygen taken into the lungs. It is now known that valvular lesions are not by any means the chief cause of heart failure, but that heart disease is more often the result of muscular weakness of the myocardium and the arteries. The circulation becomes embarrassed, and the heart is, owing to deficient oxygenation, unable to overcome the obstruction. The heart enlarges, but owing to the weakness of the myocardium it soon begins to dilate. It should be remembered that in all cases of heart disease the great danger is from muscular weakness, and oxygen is the only remedy. Therefore iron is always indicated, and should be given from ten to twelve times a year, for a period of three weeks at a time ; at the same time the patient should be placed in open air daily.

Digitalis is the leading cardiac stimulant. It causes a tonic contraction of the walls of the ventricles. This action is not uniform ; some of the fibres are affected while others are not. This contraction is due to the prolongation of the systole and shortening of the diastole. The cumulative effects of digitalis are sometimes produced where it has been given for a time in too large doses. These consist of persistent nausea and

vomiting, with intermittency of the pulse. The dose should never be large enough to produce these symptoms. Digitalis is a great remedy for dilatation, and the heart remains small and contracted while under its influence. Unfortunately, however, it has another action that is a serious drawback to its administration. It contracts the muscular coats of the smaller arteries at the same time that it acts on the heart. This results in an obstruction which neutralises all the good effect of digitalis on the heart. Now to overcome this obstruction in the arterioles vascular dilators are employed, and nitro-glycerine is very effective for this purpose. It should not be given in larger doses than one one-hundredth of a grain at the beginning. The action of nitro-glycerine in relaxing the arteries is very similar to that of amyl nitrite, but the effect of the former is more permanent. It is therefore especially indicated in high arterial tension which means diminution of the calibre of all the arteries throughout the body, with a great tendency to dropsy, owing to the venous current not receiving proper impulse. Nitro-glycerine is of great value in the treatment of chronic interstitial nephritis with a hard incompressible pulse and general arterial sclerosis, in conjunction with corrosive sublimate, the muriated tincture of iron, and the sweet spirit of nitre, as in the following :—
℞ Hydrargyri corrosivi chloridi, gr. i. ; tincturæ ferri chloridi, ʒ ij. ; spiritus ætheris nitrosi, ℥ ij. ; aquæ, ℥ iss ; elixiris simplicis, ad ℥ iv. M. S. one teaspoonful in water after each meal.

Tablets of nitro-glycerine containing one one-hundredth grain each should be taken in conjunction with the above. If this dose is well borne it may be increased up to one-fiftieth or even one-twentieth of a grain. Nitro-glycerine is very useful in angina pectoris. It should be given four or five times through the day, the last dose at bedtime. Amyl nitrite is a vascular dilator and an anodyne as well. Inhalation in a large majority of cases will instantly relieve the pain and spasm of angina pectoris. There is no danger in using it freely if the arteries are healthy. I have known sixty drops to be inhaled from a handkerchief before the pain and spasm were relieved. Sodium nitrite in doses of one to two grains is a very useful vascular dilator and stimulant. It may not be well known, but potassium iodide is equally effective and regarded by some as superior even to nitro-glycerine as a vascular stimulant. It is slow in its action at first, but when its effect is once secured it can be easily maintained in doses of five grains three times a day. The iodide is best given largely diluted with milk, and taken on a full stomach. Strophanthus in some respects is superior to digitalis. It seems to act more definitely and quickly. It produces a strong, steady, uniform systole, and does not seem to contract the arteries or raise the blood pressure as soon as digitalis. Except in special cases the dose should not exceed ten minims of the tincture. Strychnine is a powerful cardiac stimulant. The dose should be small at the beginning, not greater than one-sixtieth grain. This can be increased up to one-twentieth grain, or even as high as one-twelfth grain, or until toxic symptoms appear. Strychnine is one of the best stimulants for a weak, feeble heart, and may be advantageously combined with belladonna or atropine. Sparteine sulphate in doses of two grains and barium chloride in doses of one-sixth to one-half grain are useful ; also caffeine citrate in doses of one to four grains. A combination of all of the cardiac stimulants taken together act very much better than any one of them alone. The nitrate of silver if taken for some time in one-fourth grain doses will often relieve the pain of angina pectoris. Small doses of arsenic are sometimes useful in conditions of senile degeneration of the heart and arteries. Colchicum is of benefit in every case of irregularity of the pulse due to a dilated, gouty heart. Intestinal antiseptics are of great value in the treatment of chronic heart disease. Salol and bismuth are very useful for this purpose in six-grain doses three times per day. Active purgation is always indicated, as it lowers the blood pressure and prevents flatulence. A very good preparation for this purpose is the compound jalap powder.

Insomnia is a very distressing symptom of advanced heart disease, and hypnotics are required to produce sleep. Morphine is the best remedy for this purpose, and may be given in doses of one-fourth grain with twenty grains of sodium bromide. There is no doubt whatever as to the superiority of morphine over all other remedies for the relief of cardiac insomnia. It stimulates and regulates the heart and quiets the patient in a way that no other remedy does. Codeine can be substituted for morphine at times, and it always acts very well in doses of from one-fourth to one grain. Trional is a very useful hypnotic in doses of from ten to fifteen grains. Chloral is undoubtedly the most perfect hypnotic, but owing to its powerful sedative action on the heart it should be always combined with morphine. It can be safely given in doses of ten grains with one-fourth grain of morphine sulphate. Sulfonal can be given in thirty-grain doses in hot soup. Somnal often acts very well in twenty-minim doses given in a little sweetened water or syrup of licorice. Paraldehyde is a useful but very disagreeable preparation. It can be given in doses of forty drops every three hours until sleep is produced. It is best given in syrup of ginger.—*Medical Record, April* 4, 1896, *p.* 474.

33.—SYPHILIS OF THE HEART.

Hektoen (*J. Path. and Bacteriol.*, 1896, iii. 472) records a case of interstitial myocarditis due to syphilis in a child six weeks old, and mentions that only eleven other cases have been recorded. In two of these eleven cases sudden death occurred when the children were considered to be in good health—a noteworthy fact, since it shows that this disease in the child may lead to the same abrupt arrest of heart-action that frequently occurs in the adult when the heart is affected with syphilis. Jacquinet (*Gaz. d. hôp.*, 1895, lxviii. 917) treats the subject of syphilis of the heart very fully. In connection with the above remark it may be mentioned that he quotes Mracek as saying that of fifty-eight cases of syphilis of the heart, twenty-one ended in sudden death. Others terminated in what French writers call acute asystole, where severe dyspnœa ushers in the rapidly approaching end. Jacquinet quotes as an example the case of a prostitute who was dining in a beerhouse with some of her companions, when she complained of pain in the stomach and abdomen. The pains increased, and palpitation of the heart was added. She was removed to a hospital, and died of "advanced asphyxia" after a few hours. The pain mentioned in this case suggests angina pectoris, which may sometimes be epigastric in situation. Jacquinet comments upon this point, and refers to the possibility of cardiac pain being a symptom of syphilis of the heart. He mentions that one of the recorded cases of sudden death occurred in a sailor, who died putting his hand to his heart as if he suffered pain in that region. Huchard is quoted as saying that of 110 cases of angina pectoris, in 32 a history of syphilis was obtained, and other observers are mentioned as having noticed severe cardiac pain in syphilitic subjects. This point is of some interest, since potassium iodide is recognised as of value in angina pectoris. The drug is not generally given, however, with the idea of combating syphilis, but of influencing the diseased condition of the coronary arteries that often exists. Yet a satisfactory result naturally suggests that this disease of the coronary arteries may be sometimes syphilitic, like aortitis of the intra-pericardial portion of the aorta, with which cardiac pain is also often associated. Loomis (*Am. J. M. S.*, 1895, cx. 389) also writes upon the subject of syphilitic lesions of the heart. Fifteen cases of fibroid disease of the heart have come under his observation, three of which were considered beyond all doubt to have been of syphilitic origin. He also has seen four cases of gummata of the heart-wall. Sudden death occurred in two of these cases. Notes are given of one. An apparently healthy man, aged 35, was found lying dead on his bedroom floor, with his hat in his hand, having obviously fallen immediately after entry. The two cases that did not terminate suddenly were in young prostitutes. One of these died with intense dyspnœa and cyanosis; the other was admitted to the Bellevue Hospital for lobar pneumonia, which ended fatally. Dr. Loomis emphasises the point that the question of syphilis as a probable cause of heart disease should not be overlooked. He says: "When symptoms of cardiac failure occur during the prime of life for which no cause can be ascertained, such as rheumatic history, valvular disease, arterial changes, or kidney complications, especially in one with a syphilitic history, these should always suggest syphilis as the cause of the condition." Before leaving this subject, we may add that Dr. Shingleton Smith (*Clin. J.*, 1896, vii. 145) has recently recorded a case of enlarged heart, with an extensive fibroid patch in the left ventricle, apparently produced by a gumma, since there was a gumma on the liver and extensive scarring, the result of the presence of others. This case, which occurred in a woman aged 38, who apparently had led the life of a prostitute, is interesting, because she had suffered from symptoms pointing to the heart for nearly two years, and had been admitted to the Bristol Royal Infirmary on four separate occasions for cardiac disease during that time. As we have seen, sudden death is common when syphilis attacks the heart; but the more gradual cardiac failure present in such a case as this shows that the disease may sometimes give warning of its presence in sufficient time to render it possible that it may be combated successfully, if we do not habitually ignore its power to injure this important organ.—Dr. Fisher's summary of above quoted papers, in the *Bristol Medico-Chirurgical Journal*, 1896.

34.—A CASE OF SUDDEN DEATH DUE TO THROMBOSIS AND ADVANCED ENDARTERITIS OF THE CORONARY ARTERIES.

By J. Magee Finny, M.D., Dub.;
Ex-Pres. R.C.P.I.: King's Professor of Practice of Medicine in the School of Physic in Ireland; Clinical Physician to Sir Patrick Dun's Hospital.

[The following is an excerpt from Dr. Finny's paper:)

Case.—H.M., aged 58, admitted on November 5, 1895, had two attacks of what she terms "fever," accompanied by rheumatic pains; neither attack lasted more than three weeks.

The first attack occurred in 1882, and the second about 1889. She has borne several children and led a hard life. Of late her strength has been failing. The pains in the chest, of which she at present complains, began about three weeks previous to admission.

Present Condition.—A pale, wasted, worn-looking woman, with flabby muscles and sallow skin. The feet and legs are swollen and œdematous, and are covered with small purpuric spots, which are also scattered irregularly over the trunk and upper limbs. Temperature on admission, 99·5° F.; respirations, 34; pulse, 90, extremely irregular and at times intermittent; arteries, tortuous and atheromatous; urine acid, sp. gr. 1015, contains a trace of albumen; no blood. There is evident dyspnœa, amounting at times to orthopnœa. The apex beat of the heart is displaced downwards and to the left, the maximum impulse being in the sixth interspace; the impulse is diffused; area of cardiac dulness increased downwards and slightly outwards. On auscultation a somewhat harsh, loud, and prolonged blowing murmur is heard, with and partially replacing the first sound in the initial area. The pulmonary second sound is accentuated. The area of liver dulness is increased downwards between two and three fingers' breadth below the ribs.

November 10.—Patient gets sudden attacks of great dyspnœa and orthopnœa, which occur chiefly at night. The urine contains more albumen, sp. gr. 1020, colour normal.

November 18, 10·30 a.m.—Patient died suddenly. The nurse had been speaking to the patient, and turning away crossed to the opposite end of the ward. Hearing a sound in the bed she looked back. The patient's eyes were fixed and staring; the shadow of death crossed the face, and the jaw had dropped. Dr. Finny was summoned from the next ward and saw her immediately, but the heart sounds could not be heard on auscultation, and there was no pulse at the wrist. Strong ammonia to the nostrils and the hypodermic injection of ether produced no response.

At the necropsy the aorta and coronary arteries shewed atheromatous patches, and the coronary arteries, especially the left, are brittle and calcareous. The left sinus of Valsalva and the beginning of the left coronary artery were occupied by a blood-clot which was traced down for 1-2 inches. There was no clot in the aorta or ventricle, or right coronary.

Remarks.—The *rationale* of the case and the course of the morbid changes seem to me to be as follows:—First of all, chronic arterial and valvular disease, owing to endarteritis and valvulitis, existed. These were, in all probability, produced by the attacks of fever and "rheumatic pains" in 1882 and 1889, and by the hard life the patient lived, and by the number of pregnancies she had gone through. The intra-thoracic pains, of which she complained for three weeks before admission to hospital on November 5, 1895, and which were accentuated the day before her death, were due to the impaired circulation in the aorta and in the coronary vessels, which were undergoing atheromatous and calcareous changes, with diminution of their calibre; and as the result of impaired nutrition through these vessels, the muscle of the heart was becoming fibrous and fattily degenerated. The nocturnal dyspnœa and the palpitations were attributable to these changes being chiefly in the muscles of the right ventricular wall, and thereby failing compensation of the mitral regurgitant disease was induced. The enlarged nutmeg liver, the pulmonary venous stasis, and the passive double hydrothorax were, in like manner, due to compensatory failure. The renal hemorrhages—very unusual in cardiac disease, and then due in the vast majority to embolism—were in this case due to the atheroma of the minute branches of the arteries and to their rupture, of which a good specimen is to be seen under the microscope. In all probability the purpura of the upper and lower limbs—the pathology of which condition is still shrouded in mystery—had its factor in the same arterial changes in the cutaneous capillaries being accentuated by the altered blood crasis.

The chief interest of the case is, however, centred in the production of the sudden death of the patient. For, ill as she was for a day or two before the morning on which it occurred, there were no special warnings of its approach. I do not think the fatty degeneration of the heart of itself to be a sufficient cause in this case, as one meets with many cases in which there was far more extensive muscular degeneration and infiltration than in this, and yet death may not be due to it, and is not sudden unless rupture occur. I attribute it rather to a paralysis of the heart, due to an acute thrombosis of the left and anterior coronary artery, which produced sudden and permanent anæmia in an organ already heavily handicapped, and an inhibitory action through its nerves.

Sudden death is not a very unusual termination of disease of the aortic valves producing great regurgitation. It is also found in cases of aortic aneurism, even although the sac may not have given way, and in cases of advanced fatty disease of the heart. Moreover, where that organ is widely dilated and much weakened in long-standing mitral disease or renal cirrhosis, sudden death may close the scene.

One must never forget the important part the coronary vessels play in two at least of the above cases, and the subject of my communication illustrates how disease of these vessels alone may prove another cause of sudden death. The anatomical characteristics of the coronary arteries help to explain the occurrence of sudden death in case of their occlusion. Their terminal branches are end arteries, and they arise in the sinus of Valsalva. Thus their origin forms a part of the aorta, where atheromatous disease is a very common condition, and which is so often associated with aortic regurgitant disease in elderly people, and it is in such cases that death may occur, as anæmia of the ventricles is probably the cause of their sudden failure to carry on the circulation.

Sudden death, Osler states, not infrequently follows the blocking of one of the coronary arteries and the production of this anæmic necrosis, and he calls attention to the importance of such an occurrence in a medico-legal point of view, as it may be the sole lesion in some such cases of sudden death. My case illustrates the paralysing effect of sudden thrombosis of a large vessel, where the ventricles were already in the pathological condition of fibroid and fatty degeneration and the arteries were the seat of extreme endarteritis and sclerosis.—*Dublin Journal of Medical Science, April* 1, 1896, *p.* 289.

DISEASES OF THE ORGANS OF RESPIRATION.

35.—THE "DIAPHRAGM PHENOMENON" AND ITS IMPORTANCE IN CLINICAL MEDICINE.

By Moritz Litten, M.D.,
Professor in the University of Berlin.

By the term "diaphragm phenomenon," I understand the visible expression of the gradual detachment, during its inspiratory descent, of the diaphragm from the walls of the thorax, and its gradual apposition to the thoracic walls while it rises during expiration. This physiological process, which is repeated during each respiration, is plainly marked on the thoracic wall, by the regular rising and falling of a peculiar shadowy line, caused by the motion of the diaphragm and denoting its momentary position. As a regular and physiological accompaniment to the act of respiration, this line may be observed on the chest of every individual, healthy or diseased, unless morbid processes be present that interfere with the mobility of the diaphragm. It passes down along the thorax at an acute angle with the ribs, in the shape of a straight horizontal shadow or a wavy undulation, starting on either side at about the sixth intercostal space, and descending several interspaces, sometimes as far as the costal margin, during a deep inspiration. During expiration it again rises to its original position. During forced respiration the excursions of the diaphragm comprise two or three intercostal spaces, $2\frac{2}{5}$ to $2\frac{4}{5}$ inches being the medium; in superficial breathing, on the other hand, no more than one interspace or one and a half are covered. The visible motion of the diaphragm may comprise the entire breadth of the sides of the thorax, being evident from the axillar line to the margin of the sternum when the patient is recumbent on his back, or from the hinder axillar line to the vertebral column when he is resting on his chest, or better still on knees and elbows. Sometimes this phenomenon is more plainly marked on the right side than on the left, but I have also observed the reverse.

Although the practised eye will be able to make it out, whatever the position of the body, yet it is most plainly visible when the patient is so placed that the part of the body concerned, *i.e.*, the costal region below the seventh rib, receives the most light (if possible in a tangential direction). For this purpose the patient is made to lie on his back, his head but slightly supported, opposite the window to which his face is turned, while at a distance of three or four feet the observer, with his back toward the window, scans his chest at an angle of forty-five degrees. Now, when the patient fetches a deep breath a broad shadow is seen to travel down and up, coincident with each inspiration and expiration; no one, after having one time plainly seen this, can fail to easily recognise it in future. I wish to emphatically state here, in the face of prejudice, that this is not a matter of fine clinical distinctions, but that I am speaking of a phenomenon which whoever cares to see cannot help seeing. The only conditions to be observed are:—Horizontal position of the patient, good light, and deep breathing.

It is in unilateral trouble that my method achieves its greatest triumphs, the difference between the diaphragm's movements on either side striking the eye. If the phenomenon is totally absent on one side, whereas on the other it is normal in extent and situation, then there is either a considerable effusion of liquid or of air present in one pleural cavity (empyema, pleuritis exudative, hydro-, hæmato-, pneumothorax), or else we have a case of pneumonia of the inferior lobe. In the latter affection, as well as in empyema and in pyo-pneumo-thorax, the action of the diaphragm, owing to the infiltration of its muscular substance, is entirely suspended on the diseased side ; in the case of serous effusion, slight motions of the diaphragm are often visible abnormally far downward. At any rate, one glance at the chest is enough to tell whether, and to what extent, the muscle is confined in its movements. In the case of extensive attachment of the diaphragm to the lungs, or to the spleen and the liver, and especially in cicatricial retraction of the thorax, the motion will be still visible on one side, though much retracted. Where there is an area of dulness in the lower part of the thorax not owing to the liver or the spleen, and where the phenomenon is visible notwithstanding, though to a lesser degree, above the dulness, there can be no doubt as to the subphrenic position of the trouble—a subphrenic abscess thus being revealed. Further evidence as to nature of the dulness is obtained by a probatory puncture. If pus is then produced the diagnosis is assured.

In the presence of tumours within the thorax, the diaphragm, if visible at all, will be seen very low down. In several cases of mediastinal and pulmonary tumour we were able to distinctly perceive it, though its motion was much hampered ; this was the case especially where the disease was situated in the inferior lobe. In the presence of large tumours of the spleen and of the liver we have in many cases seen the phenomenon most plainly ; once only was it totally lacking, in a case of enormous melanotic degeneration of the liver. (The organ weighed 36 pounds.) It was never to be perceived in extensive ascites, diffuse peritonitis, or in ileus with considerable meteorisms of the intestine. In one case of acquired diaphragmatic hernia there was clear tympanitic percussion sound above the visible phenomenon, whereas in pneumo-thorax it is invisible, owing to the inspiratory in-drawing of the intercostal spaces being rendered impossible. In the same way, there will be no trace of the phenomenon in unilateral paralysis of the phrenic nerve.

My method is of great service in judging of the action of the lungs after pleuritic effusions and after injuries. The more pleuritic adhesions have formed and the firmer they are, the less clearly is it visible ; by comparing it with the other side we get a pretty definite idea of the degree to which the lung's action is interfered with. On the other hand, in many doubtful cases of the after-effects of accidents, it has been possible in this way to ascertain with positive certainty that there was no impediment to respiration, *i.e.*, to the inflation and mobility of the lungs. I have thus repeatedly in forensic cases where the injured party claimed to be unable to breathe properly (for instance in consolidated fractures of the ribs), found occasion to expose a fraud on the ground of our phenomenon showing no alteration. It serves as a reliable guide, too, in forming an unbiassed judgment in regard to therapeutic effects, especially in pneumo-therapeutics, improvement in the action of the lungs being infallibly discerned. In many instances of emphysema and pleuritic effusion treated by means of a Steinhoff apparatus, we were thus enabled to gauge the measure of success achieved. The superior and inferior limits of the "phenomenon" should be marked with lunar caustic at the beginning of a treatment, then in emphysema you may, if successful, see the phenomenon extend beyond these lines in a couple of weeks.—*Medical Record, December* 28, 1895, *p.* 901.

36.—LEGISLATION *versus* INDISCRIMINATE EXPECTORATION.

By William G. Bissell, M.D.,
Bacteriologist, Department of Health, Buffalo, N.Y.

[The following is extracted from Dr. Bissell's paper. The importance of the subject can hardly be over-estimated :]

The view that tuberculosis is an infectious disease, or rather, let us say, a communicable disease, has gradually pervaded the profession, until to-day the statement may be made that it is a communicable disease with little fear of controversy. The first statement is, then, that consumption is an infectious, communicable disease. The second statement, the one that would naturally follow, is that the specific source of this infection, the cause of the disease, is a germ, and it is this germ that alone can cause consumption. Without the passage of this specific germ into the body, without the transmission of this particular germ in some way or another in a living condition from the sick to those open to such infection, consumption can not develop, therefore can not spread.

The disease, then, can be prevented in one way by any means which prevents the germ entering the body. As to how this can be accomplished a knowledge of the germ and its nature will help answer. The germ of consumption is different from all other germs in that its growth is very slow, requiring weeks or even months for full development. It requires a special temperature for growth—namely between 99° and 102° F.—and also cannot grow without a requisite amount of moisture. While these points are true, it possesses a still greater peculiarity : namely, that it can live a great length of time—weeks, months, or even years—in a dried condition. While heat and sunlight are destructive to the organism, drying has little effect, and it is at this point that a third statement may be made—that is, the germ, the source of infection of consumption, passes out from man by the sputum, and it is this dried sputum that furnishes the greatest source of danger. Do not understand me as stating that this is the only way by which tuberculosis can be transmitted, for it is not; but it is the most common means by which pulmonary tuberculosis, commonly known to the laity as consumption, is transmitted. It is impossible for any germ to leave a moist surface and be carried off by currents of air, and for this reason the breath of consumptives is harmless in that it does not contain the germ.

If the existence of consumption in a certain individual is known, and if that individual is conscientious and exercises proper precautions (which are not harassing or painstaking), there is no reason why consumption should be given to a single other person.

It is not an hereditary disease, and always must arise from some source previously infected, and it is in reference to a most common means of furnishing infected sources that I wish to lay particular stress—that is, the vile habit of expectorating on the floors of street cars, public buildings, and similar places.

A short time ago the Buffalo Railway Company adopted a rule looking to the prevention of expectoration on the floors of their cars. Where is there a more common place for the spreading of such infection than the floors of street cars? The sputum becomes dried, mixed with dust, and is easily disseminated by currents of air, and is either inhaled or swallowed, and it is reasonable to suppose that several of the five hundred persons reported to the department of health as having died from consumption last year received their primary infection from this source.

During the year 1894 over 42,500,000 persons were carried in some 2,700 cars by the Buffalo Street Railway Company, and one can appreciate by this number the very considerable amount of dried expectoration that must necessarily have been inhaled.

Take, for instance, a man returning for the first time to his place of business after having been "laid up" with a severe attack of an acute bronchitis. It is fair to suppose that owing to his still weakened condition he will resort to the street cars as a mode of transportation, and must necessarily inhale the air of the car. If this air chances to contain tubercular-infected dust, one can readily imagine the great danger to which he is exposed.

During the past few months fifty-six microscopical examinations have been made of selected samples from the floors of cars at the foot of Main Street, and four of these examinations revealed the presence of the germ of consumption.

Contamination of theatres, churches, public buildings, and similar places can be prevented in two ways:—First, by educating the public in general as to the danger of indiscriminate and careless expectoration; second, by the passing of a city ordnance prohibiting the expectorating on the floors of cars, public buildings, and similar places.

The medical officer of health at the present time is neither aided by public opinion nor statute in any attempts he may make to stop the propagation of consumption, and, although it is clear to the medical and scientific world that tuberculosis is an infectious or communicable, and not a hereditary, disease, before legislation could possibly be obtained on this subject it is necessary to educate the public at large.—*New York Medical Journal, December* 21, 1895.

37.—ON THE TREATMENT OF SEROUS PLEURISY BY PARACENTESIS.

By Samuel West, M.D., F.R.C.P., Assistant-Physician to St. Bartholomew's Hospital, London.

[Only extracts from the indications and contra-indications for paracentesis can be given here from Dr. West's paper. It is interesting to note that Dr. West recommends the ordinary trocar and cannula, with a tube extending to the floor, as the safest apparatus for paracentesis. Roberts' trocars have for many years been employed in the Leeds General Infirmary for this purpose as against aspiration.]

(1) *Urgent Cases.*—There are certain cases in which paracentesis is not only the right thing to do, but the only thing to be done. This is when the effusion is large and the symptoms severe. Then it may be necessary to tap the patient as soon as he is seen, without a moment's delay. This may be called "Paracentesis necessitatis." Urgent symptoms do not depend upon the size of the effusion only, but to a great extent upon the rapidity of the development of the fluid. Thus very large effusions may be discovered where there is little in the symptoms to indicate their size; and, on the other hand, some effusions, not of very large size, may be associated with severe symptoms, especially if the fluid has developed rapidly. The urgency will, of course, be greatest where effusions have formed or re-formed after paracentesis with great rapidity. Thus paracentesis may become urgent within a day or two of commencement of illness, and may have to be repeated in a similar time; for instance, a young man, of about 25 years of age, was admitted on what was the third day only of his illness;

his chest was brimful of fluid; paracentesis was urgent, 80 ounces were removed, and in three days' time he had to be tapped again, and the same amount was removed, after which he made a rapid recovery. I have also removed 127 ounces after only 10 days' illness, so that the rate of effusion may be very rapid. In the first case it was at the rate of a pint-and-a-quarter in the twenty-four hours, *i.e.*, more than an ounce an hour.

On the other hand, small effusions sometimes cause such grave symptoms as to require paracentesis before they reach any large size. This is not common with simple effusion, but is more likely to occur when the effusion comes as a complication with some other affection, *e.g.*, in the course of phthisis, pneumonia, or morbus cordis; or, again, where the effusion is double, *i.e.*, on both sides. In all these cases delay is dangerous and paracentesis should be performed at once, and, if the fluid reaccumulates, repeated also without delay, even before the symptoms again become severe.

(2) In another class of cases paracentesis, though not urgent, is desirable, and that without much delay—*e.g.*, where the effusion is very large, although there may be no severe symptoms produced by it at the time. In such cases it is unlikely that the fluid will spontaneously disappear, and the patient is liable to sudden aggravation of symptoms, which would bring the case into the preceding group and make paracentesis urgent. With large effusions the removal of even a part of the fluid may lead to the rapid disappearance of the rest.

(3) A third group of cases is formed by those in which the effusion is of moderate dimensions, and in which no important symptoms are produced by it.

In nearly all these cases, as stated, the effusion will, in all probability, disappear spontaneously in time. What we have to consider is whether paracentesis will accelerate cure and when it should be performed. Upon these points there is room for great divergence of opinion. Some advocate the earliest possible interference, even as soon as the effusion can be diagnosed. Others would leave it for a period of two or three weeks, and some still longer.

As to early interference, it is very difficult to prove the advantage of interference by figures, which are as likely to mislead as to lead to a right conclusion. There seems to be a general concensus of opinion, with which my personal experience agrees, that it is not desirable to perform paracentesis too early during the ingravescent stage unless the fluid reach large dimensions rapidly or severe symptoms be present. As long as the effusion is of moderate dimensions it is best to postpone paracentesis till the active or acute stage of the disease gives the cures as 51 per cent. and the recurrences as 35 per cent.

Another very favourite seat of cancer is in the face, and there also we have probably all had cases where free removal of the disease has apparently cured the patient. The least favourable of the face cancers is that of the lip, no doubt because the muscle is soon attacked, but even here the results strongly support the view of the curability of the disease.

Take, again, uterine cancer. Hoffmeier gives the cases of cancer of the portio vaginalis and cervix uteri operated on in Schröder's clinique, and of these 42 per cent. remained well after three years and 41·3 per cent. after four years, the operation being in most of them high amputation of the cervix. In Martin's statistics of total extirpation of the uterus for all forms of cancer 45·7 per cent. remained well after three years. Of these, 10 were cases of cancer of the body of the uterus, and recurrence only took place in one. In both of these reports, however, we probably have to do with carefully selected cases, and do not thus get a true view of the probability of cure.

Let us pass on now to the subject proper of these lectures—namely, the objects and limits of operation in cases of this disease. The primary object of operation in cancer is, of course, the prolongation of the patient's life and the alleviation of his local trouble, and what I propose to assert in these lectures is that these results are in most cases best attained by aiming, where possible, at the cure of the disease. Up till quite recently, and even now, many surgeons approach operation in these cases impressed with the view that real cure is practically hopeless, and that, with a few rare exceptions, the most that can be expected is prolongation of life for a variable length of time. They therefore oppose elaborate and extensive operations which in themselves must involve considerable risk of life, and are content with fairly free removal of noticeable disease ; in some cases, indeed, they do not even go so far. Of course, if operations are performed in this manner and with these views, it is no wonder that these surgeons are confirmed in their views, and go on operating on cancer with the sole object of prolonging life for a comparatively short time. I therefore hold, and would strongly urge, the view that the first question to be kept before us in investigating a case of cancer is whether there is any possibility of curing the disease or not. Such a point of view makes a very great difference in the operation, for it is not then sufficient to remove only the noticeable disease, but it is necessary to take away as far as possible the parts in which disease may have become disseminated, although still unrecognisable—in other words, possibly infected lymphatic areas. Thus the operation, performed with the object of curing the disease, becomes a much more extensive one, and consequently much it was before paracentesis, even when the effusion does not re-form. Of course the persistence of high temperature shows that the course of the effusion is still active, and that the inflammation of the pleura has not completely subsided. It may even happen that paracentesis may be followed by a rise of temperature in a case in which at the time of operation the temperature was normal. This is probably to be explained by the irritation of the pleura, caused by the two layers coming once more into contact, for in many of these cases a return of pain and friction occur.

(2) *Phthisis.*—So many more cases of pleurisy are of tubercular origin than was formerly supposed as to suggest the conclusion, which I think to be correct, viz., that the tubercular origin of an effusion does not affect the question of paracentesis at all. There is a theory, it is true, that pleural effusion checks the progress of phthisis in the lungs. I do not think that this rests upon any reliable clinical evidence, and I certainly do not agree with it. Within my own experience this theory has been responsible for effusions being left unrelieved for a long time; and yet in the end paracentesis has been followed by complete recovery, without any progress in the disease in the lung. Pleural effusions, therefore, associated with phthisis, may be treated in the ordinary way; but as the lung is already damaged, care will be necessary if the aspirator be employed, for too great suction may easily cause the diseased lung to rupture.

(3) *Purulent Transformation of the Fluid.*—The purulent transformation of a serous effusion means fresh infection with pyogenic organisms. This infection might arise spontaneously from within, *i.e.*, from the lung or organs within the chest, or be introduced from without by paracentesis. In the latter case it is due to dirty instruments or a careless operator, and if the ordinary antiseptic precautions be observed the risk of converting by paracentesis a serous effusion into an empyema may be practically disregarded.—*St. Bartholomew's Hospital Journal, April*, 1896.

38.—PNEUMONIA AS A COMPLICATION OF DIPHTHERIA IN CHILDREN.

By HENRY W. BERG, M.D.,
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New York.

[We have reluctantly been compelled by consideration of space to cut down Dr. Berg's very valuable paper. Much of the reasoning upon which conclusions have been based, has been omitted. Especially under the antistreptococcus serum much interesting information about this new method of treatment has been left out. It will be seen that Dr. Berg suggests the use of this serum with a prophylactic object to prevent the development of broncho-pneumonia in diphtheria.—E. F. T.]

Pneumonia may occur as a complication of any stage of diphtheria. A variety of causative factors can be considered as determining the occurrence of pneumonias and other lesions of the lungs as complications of diphtheria. (1) In diphtheria of the larynx, the diphtheritic process can spread by direct continuity from above downward through the bronchi into the air cells, false membranes being found in the finest ramifications of the bronchi. (2) Minute pieces of false membrane may be drawn by aspiration into the farthest ramifications of the bronchi, thus setting up a local bronchitis or diphtheritic broncho-pneumonia, there being no membrane in the trachea or intervening bronchi. (3) In diphtheria of the larynx, where intubation has been practised, minute particles of liquid food may pass through the insufficiently protected tube into the trachea, and by inspiration into the bronchi, and thus start up a pneumonia called by the Germans "Schluckpneumonie." In tracheotomised cases minute foreign bodies may be drawn into the trachea, and thus produce an inflammation of the deeper bronchi followed by a pneumonia; finally diphtheria of the larynx and trachea, by partially occluding these passages, will prevent the proper expulsion of the secretions below the seat of the diphtheria, and thus set in motion the series of processes that terminate in a more or less inflammatory condition of the lung.

It will be seen that all of these causes are chiefly mechanical in their action, depending upon gross physical changes for their explanation. They can from their very nature only be considered as productive of the pneumonias complicating diphtheria of the upper air passages. The influence of the infection, however, is by far the most frequent cause of the occurrence of pneumonia as a complication of diphtheria, and is active not only in diphtheria of the larynx and trachea but also in diphtheria of the nose and pharynx; in fact, in any diphtheritic infection of the body.

As a final element in the causation of broncho-pneumonia as a complication of diphtheria we have the hygienic surroundings of the patient, together with the constitutional condition of each individual.

The differentiation of four varieties of pneumonia—that is to say, (1) broncho-pneumonia resulting from the extension of the diphtheritic process into the lung; (2) broncho-pneumonia occurring as a complication of diphtheria but not as a result of extension; (3) lobar pneumonia; and (4) gangrenous or purulent pneumonia—is important from a prognostic standpoint.

The most important part of our study in the light of present advances in serum therapy is the bacteriology of this complication. It has come to be recognised that pneumonias complicating true diphtheria are not due to the action of the Loeffler bacilli upon the bronchi and air cells, but are rather the result of a mixed infection.

The following conclusions are warranted:—(1) Streptococci with Loeffler bacilli and with or without other cocci are the bacteriological cause of the pneumonia complicating diphtheria. (2) That mixed infection not only causes this and other complications, but increases markedly the virulence of the action of the diphtheria bacillus. Even in cases in which the pneumonia is the result of the extension of the diphtheritic process into the finer bronchioles, the active factor in the production of the pneumonia is probably not the Loeffler bacillus, but the pneumonia is the result of the action of the streptococci upon the diseased respiratory mucous membrane.

Platini found that when he subjected animals to inhalation of pure cultures of diplococci, pneumonia did not result unless the mucous surface of the air passages was abraded. Such minute lesions of continuity are produced by the diphtheritic exudate and become the point of entry for the streptococci into the lymphatics and blood.

Symptoms which Characterise the Occurrence of this Complication in a Case of Diphtheria.—The two most important symptoms of pneumonia complicating diphtheria, outside of those obtained by auscultation and percussion, are the rise of temperature and rapidity of respiration greater than would be called for by the increased action of the heart. Of the physical auscultatory signs, those which show the presence of a local capillary bronchitis are extremely important, particularly when this bronchitis is found at the base of the lungs posteriorly. Crepitant and subcrepitant râles in this situation with rapid breathing and rise of temperature indicate when occurring with diphtheria the presence of a broncho-pneumonia.

Especially difficult will it be to obtain the classical physical signs in cases of disseminated broncho-pneumonia, for here comparatively healthy lobules surround diseased areas of lung tissue and mask the physical signs, but if one will be guided by the symptoms already given, namely, rise of temperature, increased rapidity of respiration, and the presence of capillary bronchitis, and, best of all, the crepitant râles heard on deep inspiration, he will rarely be deceived in his diagnosis. If a considerable area of lung tissue has become involved, the prognosis in these cases is extremely fatal. Indeed, even when at first but a small portion of lung tissue is involved the process is apt to extend very rapidly. Some portions of lung tissue which do not become inflamed are apt, through the closing of their terminal bronchioles and consequent imperfect inflation, to be the seat of atelectasis. Furthermore, vesicular emphysema is apt to incapacitate portions of lung tissue that have remained healthy so far as the inflammation was concerned, so that in these cases the prognosis is almost certainly fatal.

Isolated patches of broncho-pneumonia, even when of considerable size, provided the larger bronchia are not the seat of diphtheria, as a rule give a much better prognosis than broncho-pneumonia, the result of extension of the primary disease as above described.

Lobar pneumonia, although its occurrence as a complication of diphtheria is much rarer than lobular pneumonia, has a comparatively good prognosis, more favourable than that of broncho-pneumonia, even of the latter variety. It resolves by crisis, and, as a rule, in much shorter time than broncho-pneumonia. Septic or gangrenous pneumonia, it is unnecessary to say, is absolutely fatal. Furthermore, the prognosis depends upon the severity of the diphtheritic process, the stage of the disease in which the pneumonia has occurred, the surroundings and strength of the patient, and finally as to whether the case has been operated upon or not. Pneumonia complicating tracheotomy is, as a rule, almost certainly fatal, but in pneumonia complicating cases that have been intubated, while the prognosis is very grave, still it is better than in similar cases that have been tracheotomised.

While we can only accentuate the gravity of pneumonia complicating diphtheria, it is but proper to remember that, taken all in all, a great many cases recover from even this serious condition.

Treatment, prophylactic or preventive.—This being a disease due primarily to bacterial infection, it necessarily follows that cases of broncho-pneumonia occurring in diphtheria hospitals should not only be isolated, but that even cases of diphtheria uncomplicated by broncho-pneumonia should have allowed a much larger air space for each patient than is given in general hospitals to each bed. The ventilation should be perfect, the air of the ward being frequently changed without the production of a draught. The temperature of the ward should be kept at 70° F. in order to avoid weakening the patients by too warm an atmosphere. The latter precautions as to ventilation and temperature should be followed in private houses also, wherever a case of diphtheria is being treated.

Cases that have been intubated, and above all those that have been tracheotomised, should be carefully guarded from contact with cases of broncho-pneumonia. In intubated cases it is further necessary that great care be taken in feeding, that liquid particles of food do not regurgitate into the larynx. This can be, to a great extent, prevented by feeding the child in the supine position, with the head thrown well back over the edge of the couch or the lap of the nurse.

Curative treatment.—We can do nothing locally to treat the seat of disease. I say this in order to discourage the treatment of broncho-pneumonia by inhalations of antiseptic vapours. Inhalations of oxygen, however, are useful. For the reduction of temperature antipyretic drugs should be avoided; the cold pack is by far the best antipyretic agent. Children can be wrapped in sheets wrung out of ice water every half-hour until the temperature is reduced to a proper degree. These cold sheets act not only to reduce temperature but stimulate the patient. Furthermore, they have a local effect upon the lungs to reduce the inflammatory congestion. With this object in view I order the chest of children with pneumonia in the earlier days, in whom the temperature is not very high, to be wrapped in cold compresses wrung dry from ice water, regularly every hour or as often as they become warm. Counter-irritants of various kinds applied to the chest are also useful. Poultices should never be used. We are accustomed at the Willard Parker Hospital to raise the foot of the bed of children that have been intubated to the extent of ten or twelve inches, with the object of draining away the discharges, &c., by gravity into the pharynx. Of constitutional remedies we have a great many, the object being to support the vitality of the patient by food, stimulants, &c., and such drugs as maintain the action of the heart, such as ether, nitro-glycerine, caffeine, and alcoholic stimulants, for a temporary effect, and digitalis and strychnine for more continued action. In addition to all this antitoxin and other remedies for the diphtheria of which the pneumonia is a complication must be used. In view of the fact that excessive doses of antitoxin have been shown experimentally in animals to protect to a certain extent against even mixed infection, cases of broncho-pneumonia complicating diphtheria should have extra large doses of antitoxin administered.

Here, however, I wish to consider an entirely new remedy that has been used in Paris to a limited extent in broncho-pneumonia complicating diphtheria, as well as in other streptococcus diseases, and that is the use of the antistreptococcus serum. It is self-evident that the application of the serum treatment to the cure and prevention of this complication depends upon the certainty of our knowledge that pneumonia as a complication of diphtheria is caused not by the Loeffler bacillus but by a mixed infection in which the streptococci take a very important and constant part.

For the purpose of treating pneumonia complicating diphtheria the serum of a horse immunised to the action of diphtheria toxin and streptococcic cultures would be ideal, inasmuch as such a serum would have diphtheria antitoxic as well as antistreptococcus properties. The attempt has been made by Marmorek to immunise a horse to both streptococcus and diphtheria toxins. It has been found that horses already immune to diphtheria toxin can stand very much larger doses of the streptococcus culture than horses not thus immunised. Such a serum has been experimented with in Paris, but the results are as yet insufficient to warrant any real conclusions.

The use of antistreptococcus serum in diphtheria will be, however, principally on a different basis from the use of the diphtheria antitoxin, for while the latter is used to cure an already existing diphtheria, the antistreptococcus serum or antitoxin will find its chief use in preventing such complications of diphtheria as broncho-pneumonia. I believe, therefore, that, with isolation of pneumonia cases in diphtheria hospitals, and with the use of antistreptococcus serum or antitoxin in cases in which a bacteriological examination shows the presence of streptococci of Loeffler, the present mortality from diphtheria and the frequency of broncho-pneumonia as a complication of this disease will be very much diminished.—*Medical Record, March* 14, 1896, *p.* 365.

39.—PULMONARY TUBERCULOSIS, TREATED WITH MARAGLIANO SERUM.

By Francesco Carlucci, M.D., New York.

[In the last number of the *Retrospect*, Maragliano's paper read before the British Medical Association was given. Since then the serum appears to have been used, especially in Italy, where some very encouraging results have been obtained.]

After the failure of experiments with antitubercle serum made by Richet, Hericourt, and others, Maragliano succeeded in preparing a serum which has nothing in common with Koch's lymph. It is a transparent liquid of an amber-yellow colour and of the density of the ordinary serum. We do not yet know the formula of its preparation; all we know is that the method of vaccination pursued by him is entirely different to that of others. He has used all the soluble toxic products of a virulent culture of human tuberculosis—that is to say, substances which are destroyed by heat, called protein, and substances resistant to heat, called toxin. The vaccine thus prepared is inoculated into dogs, asses, horses, in gradually increased doses till it reaches the highest proportion. From these animals the serum is drawn. We do not know the true action of the antitubercle serum any more than we know the action of the diphtheritic antitoxin. The serum neutralises the toxic products (Maragliano), or exalts the natural means of defence (Bouchard), or acts by modifying the protoplasm of the cells. Whatever may be its action, there is the essential fact that the serum neutralises the action of the tuberculin. It is well known that an injection of three milligrams of tuberculin causes a reaction in a patient suffering from tuberculosis with no fever; now, if the same patient be given first an injection of one cubic centimetre of serum and one of three milligrams of tuberculin afterward, the reaction is stopped. Evidently this fact shows that the Maragliano serum contains defensive substances.

Maragliano claims that in 60 per cent. of cases treated with antitubercle serum the results are good. When we think of the great death-rate of tuberculosis, almost one-seventh of the human race succumbing, his statistics must be considered as very encouraging. I have tried the serum in five cases of pulmonary tuberculosis in which the examination of the sputum and the analysis of the urine were made by Dr. Giantureo, to whom I am greatly indebted.

[The five cases reported by the author have had to be omitted. Improvement was obtained in all of them.]

In the first three cases I noticed that the temperature after twenty cubic centimetres of serum had been injected went up to 103° F., while it had always been lowered by the first five or ten injections. This rising of temperature ceased, however, by discontinuing the injections for a week. In all these cases the urine never showed either albumin or hæmoglobin or peptone.

In conclusion, it can be said that (*a*) the serum is innocuous; (*b*) the serum causes the drying up of broncho-pneumonic foci; (*c*) the serum improves the appetite and increases the weight, so that the general return of physical force is felt; (*d*) the effect of the serum is gradual.

If for a moment we make a comparison between the results of the antitubercle serum therapy and those of the ordinary methods of treatment (creosote, guaiacol, iodoform, &c.), I think the serum must now-a-days be considered as the best curative means at our disposal. In Italy more than three hundred cases have been treated with the serum with very satisfactory results. The same results have been obtained by Gerhard, in Berlin, and by Babes, in Paris.

Dr. Vidal, after having tried the Maragliano serum, says that he is perfectly satisfied with its action. It must be maintained that because of the harmlessness of the serum we are justified in attempting to help the consumptive by this inoffensive treatment, which certainly is destined to give in the near future results which the most rational pharmaceutical treatment has never given.—*Medical Record, April* 11, 1896, *p.* 515.

40.—THE HYPODERMIC USE OF GUAIACOL IN ACUTE PULMONARY TUBERCULOSIS.

By J. G. Sinclair Coghill, M.D., F.R.C.P., Edin.,
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[The following is taken from Dr. Coghill's paper :]

The pyrexia of pulmonary tuberculosis presents two phases, related and consecutive. The first—the primary or initial stage—corresponds to the period of bacillary infection. It is subpneumonic in type, the daily thermometric range seldom exceeding 3°, and rarely falling below normal in the morning, there being usually imperfect resolution by night sweats. This primary stage is much more amenable to treatment than that into which it usually passes—the second or septic stage. This is of the hectic or suppurative type of fever, probably complex in nature, resulting from the combined toxins of the tubercle bacilli, and of the bacteria concerned in secondary necrotic and suppurative processes initiated by, and derived from, the primary infection. It is the treatment of this suppurative stage of tuberculous pyrexia that taxes to the utmost the therapeutic resources of the physician. In the treatment of this suppurative phase of tuberculous pyrexia we have often to ring the changes on a variety of drugs, in addition to other auxiliary but scarcely less necessary remedial measures. Hardly any two cases respond alike to the same remedies, and rarely indeed is it not found necessary to change, modify, and adapt them in the same patient. There is, indeed, no routine treatment for such cases.

In cases in which the range of temperature does not indicate high intensity, as I have already said, I endeavour to ascertain whether guaiacol in capsule or in cod-liver oil, in doses of ♏ v to ♏ x three times a day will not suffice to reduce it; failing in this, I usually next put my trust in gr.x to gr.xv of salicylate of soda, with ʒj of tinct. cinchon., in half-an-ounce of infusion of yellow cinchona every three or four hours. If the salicylate depresses, I substitute gr.xx to gr.xxv of salicine (dissolved with the aid of two or three drops of dilute hydrochloric acid to the ounce) in ʒj of compound tincture of cinchona. When this does not succeed I give gr.v to gr.vijss of antifebrin, or of hydrochlorate of phenocol, every three hours, when the temperature is above normal; and each time it falls below, gr.v to gr.x of sulphate of quinine. It is to be remembered in this connection that quinine acts not so much as an antipyretic but as an antiperiodic, and as such tends to maintain the thermic equilibrium by preventing the febrile reaction liable to follow the sudden drop of temperature to subnormal under the influence of the antipyretic. But in many cases, particularly when the disease is advanced, these several drugs, however associated with other general medication, fail, and then the hypodermic administration of guaiacol is indicated. [The illustrative cases have had to be omitted.] These cases had all been previously treated by the several internal remedies on the principles just described, but without any favourable effect on the pyrexia or other symptoms. The comparatively small dose necessary to employ in this form of medication is noteworthy.

In many of the cases in which the treatment was carried out the injections were persevered in for some time before any impression was produced on the temperature. It will be observed that the fall of temperature is comparatively gradual, and very rarely falls to subnormal. This valuable property of guaiacol, which especially distinguishes it, was first observed by Dr. Schetelig. In correspondence with the falling temperature, improvement almost invariably takes place in the other symptoms, especially marked in diminished cough and expectoration and increased appetite and weight. A moderate warm perspiration, which usually follows the injection at a variable interval, very soon takes the place of the regular hectic night sweats. I have usually continued the exhibition of the remedy by the mouth at the same time, not only to aid in the saturation and probable sterilisation of the blood, but because pure guaiacol seems to check the decomposition of food in the *primæ viæ*, which the notoriously enfeebled digestion of phthisical patients so readily permits. As I have already said, it is only in comparatively rare cases that guaiacol given by the mouth, even in the largest and frequently-repeated doses, influences the temperature of acute pulmonary tuberculosis when of high intensity, whereas a daily inoculation of from ♏ij to ♏v in a very large proportion of cases reduces it gradually and permanently.

As regards dose and mode of hypodermic administration, I usually begin with the minimum dose, giving it before the diurnal rise of temperature has passed above normal. If the temperature is not reduced in a few days the dose is increased drop by drop to ♏v or even ♏vij, which rarely requires to be exceeded. If the reactive sweating is excessive it may be necessary to give two small injections daily, but this is quite exceptional; latterly, at the same time, I have used guaiacol epidermically, instead of a second injection, to anticipate the evening rise of temperature, painting from ♏x to ♏xxx over the cutaneous area corresponding to the pulmonary lesion. Some patients are extremely sensitive to this mode of using the remedy, being more affected by it than the other methods. In this, as in using Koch's tuberculin, each case must be closely observed and treated on its individual indications. In a number of cases where there was much cough, and where the strumous cachexia was pronounced, I have used hypodermically a 5 to 10 per cent. solution of iodoform in the guaiacol, and I have also used the same formula in capsules, but I was unable to observe any more favourable results than with the plain guaiacol. In these solutions the iodoform readily undergoes decomposition under the influence of light, free iodine being liberated.

There is no doubt many patients object to the hypodermic treatment on account of the slight amount of pain, and that it also involves some little trouble to the nurse or attendant by whom the injection is made; and, trifling as these objections are, it must be confessed that they assert themselves and prevent a wider use of this form of medication than is otherwise desirable. The buttock is much the most favourable region for the purpose. Small areas of the skin have occasionally sloughed where the guaiacol was improperly injected just under it so as to cut off the blood supply, and alarming collapse, especially on one classical occasion, has, I believe, occurred; but I am certain they have resulted either from the impurity of the drug employed or from its having been injected directly into a vein. Very much purer guaiacol is now supplied, and if the buttock is selected no vein will be encountered of sufficient calibre. In many hundreds of inoculations I have very rarely met with any *contretemps* whatever, and then only of slight moment.

One important circumstance must be noted—namely, that in every case, sooner or later, in which guaiacol is used hypodermically, it is distinctly tasted by the patient a very few minutes after inoculation, and this lasts a considerable time. This conclusively shows that the system can in this manner be readily saturated with the unaltered drug. This is a point of some significance in relation to the mode in which it may be supposed to act on the morbid conditions present. However long guaiacol is taken by the mouth, and in whatever quantity, it very rarely thus declares its unchanged presence in the blood, and this, indeed, may be reasonably accepted as the explanation of its different effects when used hypodermically and when otherwise administered.

The observations recorded in the series of cases I have submitted justify, I believe, the conclusion that in small doses, administered subcutaneously, guaiacol by itself succeeds frequently in reducing the temperature and relieving the objective symptoms satisfactorily and often permanently in acute pulmonary tuberculosis when it and other accredited antipyretics have failed when exhibited by the mouth. This marked difference in effect may be due to changes effected in the nature and properties of the drug during the digestive process. The fact is that guaiacol is of extremely unstable organic constitution, and its true chemical composition has probably not yet been satisfactorily determined.

I may be permitted to conclude this paper by merely referring to two compounds of guaiacol—the carbonate of guaiacol and benzoyl guaiacol—that have been recently introduced with great expectations. I have tried them both, but have not been able to satisfy myself that they have any special claims to therapeutic preference. The carbonate of guaiacol is a powder, whereas the carbonate of creasote is an oily, dark-coloured liquid. This shows very material chemical discrepancy in their constitution.—*British Medical Journal, March 7*, 1896, *p.* 586.

41.—THE DIAGNOSIS OF MALIGNANT TUMOURS OF THE LUNGS.

By Dr. ADLER.

[The following is taken from Dr. Adler's paper :]

A symptom of considerable constancy is the dyspnœa. This appears not infrequently among the very earliest symptoms, especially in those cases in which a large bronchus is the primary seat of the lesion. Accordingly, repeated dyspnoic attacks, with absence of physical signs sufficient for their explanation, must always be regarded as suspicious. When, by the increase of the tumour in size, or in consequence of the effusion of great quantities of fluid into the pleural cavity, the available space within the thorax is seriously encroached upon, or when the malignant growth compress the trachea, the nerves, the circulatory organs, it is evident that extreme dyspnœa must result.

Darolles, in his excellent thesis, has already called attention to the fact often observed that in cases of pleuro-pulmonary cancer the evacuation of the effusion from the chest affords either no relief at all or but a very slight and temporary amelioration of the dyspnœa. In the same sense we must interpret the frequently observed disproportion existing between the magnitude of the dyspnoic attack, and the rather insignificant amount of fluid that can be evacuated.

The pain is so uncertain and inconstant in the lesions we are considering that little significance can be attributed to it as a means of differential diagnosis. As a curious illustration of this may be mentioned the case reported by Gay, in which a diffuse endothelioma of the left pleura was complicated by very constant and severe pain in the right thorax, a phenomenon which even the autopsy failed to elucidate.

Auscultation and percussion afford manifold serviceable diagnostic points. In cases not complicated by pleuritic effusions, quite irregular and atypical areas of dulness on percussion are frequently met with. The bronchial tubes are almost completely choked or obliterated, and the pulmonary tissue is entirely supplanted by the neoplasm. Under these conditions a more or less extensive territory is totally cut off from all communication with the air-passages, and is occupied by tissues entirely devoid of air. If we add to this the infiltrations and adhesions of the surrounding pleura we can readily understand that over such areas we must obtain an absolutely flat percussion note, and that auscultation demonstrates diminished or entirely abolished respiratory and vocal resonance. It is this diminished or abolished vocal and respiratory resonance, accompanied by a flat percussion note over an irregular area, in the absence of all pleuritic effusion, that appears diagnostically significant. It is furthermore important that these areas of dull percussion increase in extent sometimes very slowly, sometimes more rapidly, but certainly and surely. By this unfailing tendency toward extension these lesions can be distinguished from others which may sometimes present similar physical signs. Among these may be mentioned dense pleuritic adhesions and thickenings, fibrous indulations of the lung, splenifications, &c. All these conditions may occasionally give rise to auscultatory and percutory symptoms similar to those just mentioned, but these physical signs once established they tend to remain unchanged, thereby different from the invariably progressive character of the malignant infiltrations.

Béhier attributed a special diagnostic significance to the swelling of the lymphatic glands. Involvement of the supra-clavicular glands was associated with tumours, swelling of the submaxillary glands with tuberculosis. Darolles has sufficiently demonstrated the utter unreliability of this distinction. It is, moreover, incontestable that numerous cases of neoplasm have been observed in which enlarged glands could not be detected during life.

In the course of the further development of the tumours under consideration, the bronchial and mediastinal glands are apt to be involved; the mediastinum and the pericardium may be invaded by cancerous deposits. Where this takes place we may obtain, besides the symptoms due to compression briefly mentioned above, all those symptoms due to mediastinal tumours, a discussion and the diagnostic significance of which can not be entered upon here.

Lastly, those general symptoms which are the common attributes of malignant tumours irrespective of their localisation can claim a merely relative diagnostic value. Symptoms which must be considered cachectic, especially in elderly subjects, must always give rise to the suspicion of malignant tumour, though the localisation of the growth may remain obscure. In those cases where objective signs pointing to malignant neoplasm can be made out, the cachectic symptoms often furnish corroborative testimony that should not be underrated as a means of assuring the diagnosis.

In the group of general symptoms we must also class the variations of temperature. Malignant tumours of lung and pleura, if not complicated by inflammatory processes, do not, as a rule, cause fever. In many cases, nevertheless, particularly in the latter stages of the disease, febrile temperatures, usually not very high and quite atypical, have been observed.

Ebstein has established a type of fever, the so-called chronic relapsing fever, as characteristic for certain forms of malignant tumour. I am unable to state whether this may occasionally be of diagnostic value with reference to the pleuro-pulmonary neoplasms.

In certain cases it may be possible to distinguish *intra vitam* the species of tumour, whether carcinoma or sarcoma, &c. A close and careful consideration of all anamnestic, clinical, and physical data, a few of the more important of which I have endeavoured to review here, will enable us to judge of each individual case, and not infrequently to arrive at a correct decision. Unhappily, our decision in the present state of our science conveys no prospect of cure to our patient. The certainty of the diagnosis implies the death warrant of the unfortunate sufferer. Nevertheless, we may entertain the conviction that everything that tends to enhance clearness of vision and purposeful action on the part of the physician must in the end be of service to suffering humanity.—*New York Medical Journal, February* 15, 1896.

DISEASES OF THE ORGANS OF DIGESTION.

42.—THE DIAGNOSIS OF CHANGES IN THE SIZE, POSITION, AND MOTILITY OF THE STOMACH IN CASES WHERE INTRAGASTRIC INSTRUMENTS CANNOT BE USED.

By BOARDMAN REED, M.D., of Atlantic City, N.J.

[The following is an excerpt from Dr. Reed's interesting paper:]

It is best to examine the patient at a time when the stomach should be entirely empty—that is, in the morning fasting or six hours at least after the last meal. But this is not always practicable, and after a light breakfast or a very moderate lunch a healthy stomach will usually be found by the tests of clapotement and percussion to have voided its contents into the intestine at the end of two hours. Even when these tests show that gastric digestion is still incomplete, we may in many cases nevertheless satisfy ourselves with sufficient accuracy as to the size, position, and motility of the organ; but in cases of difficulty or obscurity it is safest to examine a second time under the best possible conditions.

If upon examining a patient six hours at least after his last meal we obtain the splash by clapotement, we can infer deficient motility. Noting at the same time the lowest point where the splash can be distinctly heard, we may infer as a rule that the lower boundary extends to about that level. We should then percuss the abdomen with the patient in various positions to verify the results of clapotement and map out the boundaries. If no splash should be obtained, before proceeding to administer water it is well to percuss with the patient first recumbent, and afterward in the erect posture, to determine the apparent stomach-boundaries while the viscus is still empty. Note these mentally or mark them on the body. Then have the patient drink one-eighth to one quarter litre of water, and try again to obtain the splash. If it is obtained distinctly after the smaller amount of water mentioned, it raises a question as to the motility, and will also show where to percuss with especial care and delicacy for the lower border.

For the adept in percussion the fingers may suffice to bring out the finer differences in tone, but with a good percussor and pleximeter the task is greatly simplified. [The author figures a rubber pleximeter introduced by him.]

Having already made out the apparent boundaries with the stomach empty, we percuss again with it partly filled while the patient stands, or, in the case of persons who are in bed or very weak, sitting upright will usually suffice to bring the fluid contents in contact with the front wall of the abdomen, and thus develop a zone of dulness. In going over a new case in this way it is best to give one glass of water at a time, when, if the stomach is atonic, the area of dulness usually extends downward with each successive glass; but if entirely strong, it extends upward only or mainly.

One can begin either above or below, and should then percuss carefully in the median, left parasternal, and mammillary lines from the level of the nipple to the pubes in any doubtful case. Having determined the highest and lowest points of the anterior thoracic and abdominal surface with which the stomach is in contact, we should percuss perpendicularly across the oblique curved line joining these points and forming the left lateral boundary of this epigastric area. Then the right lateral boundary separating the stomach from the ascending colon should be made out in like manner. With the patient erect and the stomach well filled, this is usually a simple matter, the ascending and descending colons and their flexures nearly always emitting a more or less tympanitic note, even when partly filled. If the precaution has been taken to have the colon previously emptied, the contrast with the dull note over the full stomach will be, of course, still more marked. Having the patient lie first on one side and then on the other during the percussion may help to clear up a doubtful question. Filling the colon with air by the double-bulb rubber syringe in the usual manner will emphasize strongly the contrast with the dull stomach-area in the erect position, and filling the colon with tepid water while the patient is recumbent reverses the contrast in a very striking manner, though this is not a feasible undertaking with all patients, since some cannot retain the liquid long enough.

The determination of the upper border or stomach-lung boundary is the most difficult part of the procedure. Usually, however, by trying alternately light and strong percussion, there will be obtained a marked difference in the two qualities of the resonant tone, that over the stomach being more tympanitic. Still it requires much practice to make this out quickly and positively. Occasionally in exceptional cases where the stomach contains very little gas, we may fail at one examination and succeed readily at a second one. This line is sometimes more easily determined after a meal, since then such gases as are present are forced to the upper part and produce more tympany. One needs to bear in mind such possible disturbing factors as a greatly enlarged spleen or enlarged left lobe of the liver; also left-sided pleurisy filling up the half-moon-shaped space of Traube with exudation.

However, there is only one condition at all frequent which is likely to prevent us entirely from determining the boundaries of the stomach by the combination of procedures we have been describing, and that is extreme obesity with great thickening of the anterior abdominal wall. Fortunately, however, this is a condition which does not often coexist with any serious form of gastric disease.

To recapitulate, the following nine different kinds of stomachs can usually be differentiated by this combination of methods :—(1) Stomach of normal size, in normal position, and having sufficient motor power. (2) Stomach normal as to size and position, but weak in motility. Gastric atony. (3) Stomach enlarged, but motor power strong. Megalogastrie of Ewald. (4) Stomach enlarged and motility weak. Dilatation or gastrectasia. (5) Stomach wholly displaced downward, but otherwise normal. Not enlarged. Gastroptosis of Glenard. (6) Stomach both enlarged and displaced downward as a whole, but not dilated. Motility good. Megalogastrie with gastroptosis. (7) Stomach wholly displaced downward and dilated. Weak motility. Gastroptosis with gastrectasia. (8) Pyloric end of the stomach displaced downward and swung around to the left, but without dilatation. Often the pylorus is carried down almost, if not quite, into the long axis of the fundus, producing what has been called by Meinert, Kellogg, and others the vertical or subvertical stomach, according to the degree of the displacement. This form may be appropriately called pyloroptosis. (9) Pyloric end of the stomach displaced as in No. 8, and also dilated. Pyloroptosis with dilatation.

These several varieties of stomachs may be recognised as follows :—(1) Normal stomach. If empty, no splash will be obtainable until after the viscus has been partly filled, and then either none or a feeble one heard, not lower, as a rule, than midway between the lower end of the sternum and the umbilicus—exceptionally to within three cm. of the umbilicus. Percussion, especially with the patient standing after drinking water, will demonstrate the boundaries in normal place. (2) Atonic stomach. The findings will be the same, except that a splash may possibly be heard four to six hours or longer after a full meal, or, if not, the drinking of a very small quantity of water will develop it decidedly. Percussion will show delayed emptying of the organ. (3) Megalogastrie. Upper border will be found in the normal situation. Lower border may be at the level of the umbilicus or even below, but motility good. No splash obtainable six hours or longer after a full meal. (4) Gastrectasia. Splash usually obtainable six hours or longer after a meal, and in bad cases at any time during the twenty-four hours. Percussion shows enlargement of the organ and delay in emptying itself. (5) Gastroptosis. Splash usually rather more easily obtainable than in the normal condition and at a lower level, often at the navel or even considerably below it. Percussion shows descent of both upper and lower boundaries, but no enlargement. (6) Megalogastrie with gastroptosis. Same as in No. 5, except that percussion shows the upper boundary not so much displaced, or if so, then the lower border still further below its normal line. Percussion shows enlargement. (7) Gastroptosis with gastrectasia. Same as No. 6, except that the splash is obtainable too long after taking food or drink. Clapotement and percussion shows abnormal delay also in emptying the stomach. (8) Pyloroptosis. Splash obtained usually far below the level of the normal lower border. Percussion reveals the peculiar outlines of the vertical stomach with the pyloric end low in the abdominal cavity. (9) Pyloroptosis with dilatation. Same as No. 8, except that the splash is usually more pronounced, and may be found too long after food or drink. Percussion shows also a widening of the pyloric end of the stomach.

In any of the foregoing cases it may be necessary to inflate the stomach with carbonic acid gas, supposing it to be impracticable to use the tube, or to inflate the colon with air from below.—*Medical News, January* 18, 1896, *p.* 57.

43.—REMARKS UPON "GASTRIC ULCERATION."

By Donald W. C. Hood, M.D., F.R.C.P., London,
Senior Physician to the West London Hospital.

[The following is taken from Dr. Hood's paper :]

I shall ask your attention to the importance of gauging to the best of our ability the value of the factor hemorrhage, as a symptom of ulceration, and I shall particularly allude to the vital importance of a differential diagnosis between the various forms of acute abdominal pain, with the view of recognising, at the earliest possible date, the existence of perforating ulcer.

[The author then relates in full four cases of gastric ulcer.]

I have now very briefly alluded to four clinical cases, each of which may be considered as more or less typical of a group, subdivision or variety of some of the various forms under which we practically meet with gastric ulcer. The first marked by extreme duration of symptoms, by its recurrency, sufferings and general distress of the gastric functions ; yet with all, misleading some of the best opinions of the day, brings forcibly before us the extreme difficulty of differentiating between dyspepsia of organic and that of inorganic or functional or neurotic foundation. The second brings before us the fact that even an extreme form of ulceration may exist for a long period of time, and yet be without a symptom calling attention to the organ diseased. The third attracts attention to the value of sharp, acute abdominal pain, even without any special digestive trouble, as denoting acute perforation. It suggests to us the importance of making very careful study of that important symptom—pain over the abdominal area ; for these are cases in which the brilliant advances made in abdominal surgery give us hope that, in the future, we shall be better able to cope with one of the most dangerous accidents that human flesh is heir to. It belongs to that series of cases in which pharmacy is of no value, often harmful, every moment is precious, and the harmony of the issue can only be promoted by surgeon and physician working hand in hand. The fourth group, one to me of peculiar interest, is strikingly common ; we are all familiar with the hæmatemesis of the young, anæmic girl. Does such hemorrhage invariably denote an organic breach of surface ? Or may it not be a hemorrhage in many ways akin to that so constantly seen in simple, but profuse, epistaxis ?

Hemorrhage assumes an important position in the symtomatology of gastric ulcer, and it will be well to consider this special symptom somewhat in detail.

What is the value of hæmatemesis as denoting an organic lesion of the stomach ? How far are we justified in assuming the presence of ulcer as causal in producing dyspeptic inconvenience in those cases where hemorrhage is absent ? It is extremely common for patients to pass through months and even years of gastric trouble, evidently due to organic breach of surface, and yet, during the entire course of their illness, all degrees of hæmatemesis may be absent. Rarely, if ever, acute perforation of stomach, especially when occurring in early adult life has been preceded by hæmatemesis. I do not include in the category those patients who have suffered previous to perforation from evident symptoms of gastric ulcer, but rather I refer to that class in which peritonitis is the initial symptom, and where dyspepsia has been vague and of little inconvenience. I feel, most strongly, that we are often in danger of neglecting those precautions essential to success when treating gastric ulcer, by relying too much on hemorrhage as indicating ulcer. The post-mortem room will be found providing instance after instance where gastric ulceration has existed for long periods and no hæmatemesis has resulted.

Let us now look at the reverse, namely, those cases where hemorrhage, I might also say where hæmatemesis alone, has been considered as sufficient warranty for a diagnosis of ulcer.

To examine the symptoms with care, the factor age has to be considered. Hæmatemises is of varying significance according to the time of life at which it occurs. Thus we meet with hemorrhage in early adult life, middle life, and advanced life; speaking roughly, such hemorrhage may be classed under the three heads, ulcer, cirrhosis of liver, *i.e.*, portal and malignant. In the *Transactions of the Medical Society of London* for 1892, vol. xv., will be found a paper by myself, in which I have attempted to show that the hæmatemesis of early adult female life may possibly have a different explanation to that usually accorded to it, and that this hæmatemesis puellaris is probably not caused by gastric ulceration. The hemorrhage of early adult female life is almost limited to the sex. Perforating ulcer of the stomach is as often met with among males as among females. Now this statement is contrary to that usually expressed in our text-books, but I am glad to find that it is supported by Dr. Pye-Smith in his Lumleian lectures on the etiology of disease. From such statistics collected for me, I found that during twenty years, 1870-1890, 16 patients were admitted into Guy's Hospital suffering from peritonitis, the result of a perforating gastric ulcer; 8 of these patients were males and 8 females.

If the hemorrhage so frequently observed during girl-life were invariably dependent upon ulceration, it is at least strange that the attacks do not prove more fatal than is the case. Surely if the ulcer had perforated a vessel so large as to give rise to the severe hemorrhage we are often accustomed to see, further perforation of the tissues of the stomach would be prone to follow.

During the twenty years above-named, I ascertained that 155 cases of hæmatemesis were under treatment at Guy's, of these 66 were considered as due to gastric ulcer; of these, 29 were patients under 30 years of age, 2 only being of the male sex. None of the patients succumbed to the attack, and a careful examination of the case books and post-mortem records for twenty years of one of our largest Metropolitan Hospitals (Guy's) brings out the striking fact that during this period of time there had been no single recorded case of fatal hemorrhage occurring in the person of a young female, the subject of severe hæmatemesis. I have private notes of 32 cases, but I have never as yet seen a fatal issue, though in many of those patients the hemorrhage had been most profuse.

If so be the hemorrhage which I designate hæmatemesis puellaris is not due to actual ulceration, can we differentiate between such cases and those where an ulcer is the cause? During the first few hours of the illness an accurate diagnosis is impossible, but when we know the age of the patient, have a history of anæmia of some duration, and when we contrast the dyspepsia of the patient with that met with in gastric ulceration, I believe we have ground for assuming that hemorrhage from the stomach of a young anæmic girl is open to other explanations than that of a perforating or extending gastric ulcer. Further, such a view of hæmatemesis at this period of life will tend to explain the anomalous and conflicting testimony of clinical statistics as compared with those gathered from a surer field—the post-mortem room.

The diagnosis of gastric ulcer in many a case is as clear as noon-day sky; in others conflicting, ambiguous, indefinite symptoms mask the true nature of the illness. I consider that any pronounced dyspepsia, by which I mean pain or discomfort after food, vomiting, pyrosis, which does not yield to ordinary remedies, should be treated from that standpoint, which I maintain should invariably be insisted upon when advising patients in whom we may suspect the presence of ulcer. The first essential is complete rest, physiological and general. The patient should be confined to bed and dieted as the individual exigencies of the symptoms may require. In many, simply milk food with an alkaline mixture and a few drops of tincture of opium will lull and assuage all pain and irritation. In another, rectal alimentation must be rigorously carried out and full doses of opium can be used with the greatest benefit.

In my own hands, preparations of opium have proved of far more value than bismuth, and in the milder conditions of indigestion, especially that seen in anæmic patients of both sexes, a mixture composed of sodium carbonate, aromatic spirit of ammonia, and five minims of black drop with some bitter such as calumba, has quickly restored tone to the stomach. When anæmia is more decided, and the pain often very severe, I have been surprised at the good results following the administration of a few drops (four to five) of the tincture of perchloride of iron combined with the same quantity of liquor arsenicalis hydrochloricus. It is common experience that these cases are also much benefited by saline purgatives. The sudden, alarming, perilous symptoms attending immediately upon perforation can only be successfully met by knowledge of the various kinds of acute abdominal pain. Personally, after an experience which now extends over a quarter of a century, I must confess to often feeling the greatest difficulty in making an accurate diagnosis in these distressing cases. The last two that came under my care, both within the past few months, I wrongly diagnosed; although the possible presence of perforation was kept in view, I did not consider that in either case the symptoms warranted my asking my surgical colleague to explore the abdominal cavity. We are apt to be biased by our latest experience, and I have within the last year or so seen several cases in which typhlitis—I use the term in its generic sense as denoting inflammatory mischief in the neighbourhood of the cæcal appendix—has commenced with alarming severity and with extreme pain ; each case terminated satisfactorily under free doses of opium, the acute painful stage not lasting many hours.

Last spring two men were admitted under my care on the same day, both patients had much the same symptoms, both were more or less collapsed by violent colic. I took the greatest care in my examinations. In the one case I thought the symptoms suggested perforation, but after a few hours typhlitis proved to be the cause of pain and illness. In the other patient, bed and ordinary simple remedies gave so much relief that I scarcely entertained even a suspicion of the true nature, which proved to be a perforation of a duodenal ulcer.

Without doubt if perforation has caused the abdominal symptoms every moment is of value, and any drugging most strongly contra-indicated ; the sooner the patient is in the hands of the surgeon the greater will be the chance of successful operative measures.

With regard to the special symptoms pointing to perforation, I have noticed in a certain proportion of cases that the primary pain has been almost limited to the hypogastrium. This was so much marked in the last case under my care that with a history of acute suppression of menses and extreme tenderness over the uterus, I concluded that the cause for pain was a local peritonitis, the fact being that the symptoms were caused alone by a perforating gastric ulcer.—*West London Medical Journal, January*, 1896, *p.* 23.

44.—CHRONIC DYSPEPSIA IN CHILDREN.

By J. Walter Carr, M.D., M.R.C.P., Lond.,
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Everyone recognises dyspepsia in adults in its protean and omnipresent forms, every medical man knows its importance in infancy in association with errors of diet, but between these two periods of life is one in which its frequency and the varied symptoms it produces are perhaps less commonly realised, although possibly it is hardly less prevalent than in adult life, and scarcely less important than in infancy.

Symptoms.—The symptoms of dyspepsia in childhood are both local or direct and reflex or indirect, and differ widely from those met with in adults. We will take the direct symptoms first: the appetite is capricious and irregular, there being often a craving for unsuitable articles of diet, with distaste for more wholesome but plainer food; hence follows one of the most important symptoms, viz., wasting; simple dyspepsia in adults is rarely associated with much wasting; in children it is necessarily different, for the anorexia at a period of rapid growth must necessarily markedly affect nutrition; at the same time the child is usually pale, irritable, and listless, taking little or no interest either in its play or its work.

The tongue is commonly furred with prominent papillæ, and often presents the curious irregular patchy distribution of furred and over-clean areas sometimes termed the mapped or geographical tongue. The bowels are generally costive, but may be irregular, especially in younger children, constipation and diarrhœa tending to alternate. The abdomen is usually distended, and this is the more noticeable owing to the natural prominence of the belly in children from the small pelvic development. Pain, referable either to the stomach or bowels, may be complained of, but is seldom severe in chronic cases.

But besides the direct symptoms, there are others which illustrate very markedly the reflex consequences, which in children so readily result from irritation of any organ and especially of the stomach, and which unless rightly interpreted may be a cause of much trouble in diagnosis and treatment. Headache, particularly in the morning, is a very usual symptom, also grinding of the teeth; night terrors may occur in neurotic excitable children, and may be wrongly and ineffectually treated unless their true cause be understood. Syncopal attacks may undoubtedly be due to dyspeptic conditions, although the possibility of *petit mal* must not be overlooked. A dry hacking cough is by no means rare, and its significance is frequently misinterpreted. Henoch has pointed out that serious asthmatic symptoms—with cyanosis and rapid breathing—may be due entirely to irritation of the nerves of the stomach in gastric catarrh. Of course more acute gastro-intestinal attacks, with severe pain, vomiting, and diarrhœa, and often exaggerated reflex symptoms, are particularly apt to supervene in children who already suffer from chronic gastro-enteritis.

Diagnosis.—At times this is clear enough, the local symptoms —loss of appetite, furred tongue, and constipation, with markedly unsuitable diet and defective hygienic surroundings—sufficiently indicate both the disease and its cure, but in many instances there are few conditions which give rise to greater difficulty in diagnosis than that of chronic dyspepsia. The child is brought, perhaps, with a history of wasting and persistent cough; the parents naturally suspect consumption; a physical examination yields somewhat equivocal results, owing to the distinct bronchial breathing heard in a child in the upper interscapular region, over the large bronchi, and especially on the right side. Even if we exclude pulmonary tuberculosis, we naturally think of the possibility of that well-nigh undiagnosable condition, early caseation of the bronchial or the mesenteric glands, and the difficulty is increased by finding, as we often do, that the evening temperature is generally somewhat above normal, whilst the nervous symptoms may excite a suspicion of commencing tubercular meningitis. In many such cases only time and the results of a carefully regulated dietary will clear up the diagnosis, but oft-times, unfortunately, under the mistaken apprehension of incipient tuberculosis, the child is dosed by the parents, and frequently by the medical man, with cod-liver oil, "chemical food," syrups, &c., as well as with a supposed nourishing diet—a line of treatment which only aggravates in the highest degree the real malady.

Next, perhaps, to consumption the most frequent parental diagnosis is that of worms, and, indeed, they are often present, especially thread worms, but to regard them as a cause of the symptoms is a reversal of the true state of affairs; we need more and more to try and impress upon the public mind that intestinal worms (excluding perhaps tape-worms) exist in the alimentary canal because it is an unhealthy condition—in a state usually of chronic catarrh—and that the symptoms which they are supposed to produce are, as a rule, not due to worms at all, but to the catarrhal state of the bowel which permits their existence. Worms are, in fact, to a large extent a symptom rather than a disease, and we shall best get permanently rid of them by treating the abnormal condition of the intestines.

On the other hand, we have to beware of the danger of mistaking for mere dyspepsia, especially in children who are known to be subject to it, the early stages of tubercular diseases or of typhoid fever, a slight but persistent tonsillitis, of which the child may make no complaint, or a chronic rheumatic condition with very little joint trouble, a by no means rare occurrence in early life.

Treatment.—The first and most important step is, of course, to recognise the true cause of the varied symptoms for which the child may be brought; it is so easy to get into the habit of treating worms, night terrors, cough, constipation, &c., purely symptomatically; but the most free and serious error is to regard the case as one simply of anæmia and debility, or else of threatened tuberculosis, to be treated by tonics—cod-liver oil, "chemical food," iron, &c.—and by feeding up, both with unsuitable food and at too frequent intervals, with the result of increasing and perpetuating the already existing digestive disturbance. Even in cases in which tonics will eventually be needed, they must not be given until the alimentary canal is in a fairly healthy condition, or they will do more harm than good.

In the great majority of cases the first point to which to attend is careful regulation of the diet; the food should be given at regular intervals and nothing between meals, tea should be forbidden, and all cakes, buns, biscuits, sweets, jams, pastry, &c., these being the more pernicious because often given at odd times to tempt, as is supposed, a poor appetite. Potatoes should be allowed in very small quantity only. On the other hand, we may recommend an ordinary meal of fresh meat once a day, about noon, with green vegetables, and a milk-pudding after. For the other meals, fresh fish, porridge, bread and butter, eggs, fruit, and milk in abundance, but as a food, not a beverage. There are, of course, some children, just as there are some adults, who have idiosyncrasies in not being able to digest some special article of diet, but these peculiarities obviously cannot be considered in a general statement—each case must be dealt with on its merits. The parents will often say that children will not take the plain, wholesome diet recommended, and can only be got to eat fancy things, sweets, &c. Owing to long-continued pampering and improper feeding this may be true, but no child will starve itself to death because it cannot get just what it wants, and when it finds its whims ungratified, in default of anything else, it will soon learn to partake of a suitable dietary.

Having regulated the food, the next important matter is to insure a full and regular daily action of the bowels; even though they are said to act every day, a mild aperient is usually desirable, in order to prevent any undue retention whatever of intestinal contents, or any accumulation of mucus, which is often produced abundantly in catarrhal conditions of the bowels in childhood. If there has been constipation and the tongue is much furred, one or two grains of calomel will be useful at first, otherwise rhubarb and soda, or gray powder and soda, should be given every other night. If either round or thread worms be present a few grains of santonin may be added to either of the above powders, and given before breakfast for three or four mornings. When convalescence is well-nigh established, half a teaspoonful or so of the compound liquorice powder forms perhaps the most suitable and agreeable habitual laxative.

Thirdly, the child should be out in the open air as much as possible. There is great danger that when, as so often happens, these dyspeptic children suffer from cough they may be kept indoors either altogether, or at least on the slightest approach of cold or damp weather; nothing could be more injurious, and the reason why in large cities the poorest class of children, for whom the street is the habitual playground, are often more healthy than those of a slightly higher social scale, is probably the far greater amount of at least approximately fresh air which the former get. In many cases of town-bred children, in whom the dyspepsia is a part mainly of general debility and anæmia, a change to seaside or country air is the most rapid if not the only cure.

The suitability of the clothing must, of course, be seen to; its quantity is not, as a rule, at fault, but rather its distribution. In this respect old traditions as to hardening the skins of children die slowly, and the chest is not uncommonly enveloped in four or five layers of flannel, whilst the arms, legs, and thighs are left almost entirely bare.

Last, and in many respects least, we come to drugs:—A combination of bicarbonate of soda (7 grains), tincture of rhubarb (20 minims), tincture of nux vomica and spirit of chloroform (4 minims of each), may be given to a child of five years three times a day, about half an hour before meals, and if anæmia be very marked 2 grains of citrate of iron and ammonia may be added. After food, if the tongue be not much furred, one or two teaspoonfuls of maltine may be given twice a day. In the later stages, when the dyspeptic symptoms are much improved, a mixture of liquor strychninæ (2 minims) with two or three teaspoonfuls of vinum ferri citratis, is useful. Cod-liver oil is best avoided, except in the winter months and when convalescence is quite established; probably all "chemical foods" and tonic syrups are injurious, owing to the sugar they contain causing fermentation and flatulence. If the nervous symptoms, such as night terrors, are prominent, some bromide of potassium may be given with the other drugs mentioned; but such symptoms should never be treated by nerve sedatives only.

Finally, as an additional incentive to the prompt and active treatment of these cases of chronic dyspepsia, we should remember that if long continued, it must lead to enlargement of the Peyer's patches and mesenteric glands, a condition which facilitates in the highest degree the lodgment of any tubercle bacilli which may be taken in the food, a lodgment which is still further promoted by the lowered general vitality in these cases; thus chronic gastro-enteritis becomes an important predisposing cause—first of abdominal and eventually, perhaps, of general tuberculosis.—*American Journal of the Medical Sciences, December*, 1895, *p.* 666.

45.—THE PHARMACOLOGICAL ACTION OF PURGATIVES.

By WILLIAM MURRELL, M.D., F.R.C.P.,
Lecturer on Pharmacology and Therapeutics at Westminster Hospital.

There is much difference of opinion respecting the mode of action of purgatives, and especially of the group—the latest addition to our list—which includes the natural aperient mineral waters. One thing is perfectly clear, and that is that the majority of purgatives derived from the vegetable kingdom belong to the class of cutaneous irritants. The irritative effects of such drugs as croton oil, gamboge, and elaterium when applied to the skin is well known. Croton oil irritates the skin, not only when applied topically, but even when taken internally. Elaterium is such a powerful cutaneous irritant that people engaged in handling the drug suffer severely from ulceration of the nails and adjacent tissues. Colocynth, although less distinctly an irritant, produces persistent sneezing when inhaled, accompanied in the case of many people by attacks of dyspnœa resembling those of asthma. A similar condition results from inhaling powdered ipecacuanha, which is a common constituent of most of the ordinary aperient pills. This irritative effect leads, when the drug is taken internally, to increased peristaltic movement and to a rapid evacuation of the intestinal contents. The stimulation may be exerted on the mucous membrane itself or on the motor ganglia which preside over the contractions of the intestines. If it is irregular or intermittent it is apt to cause the patient much discomfort. From a purely pharmacological point of view, any cutaneous irritants, with the exception of those which, by their general action produce symptoms of poisoning, might be employed as purgatives, provided only that they were not absorbed by the stomach and reached the intestines in safety.

Saline purgatives have an enormous advantage over purgatives of vegetable origin in not being irritants. It is probable that most of them act simply in virtue of their bitterness. The intensely bitter taste, both of sulphate of magnesium and of sulphate of odium is well known, and is readily appreciated even in very dilute solutions. Bitters excite the secretions both of the stomach and of the intestines. Familiar examples are afforded by the action of such drugs as gentian, quassia, calumba, and angustura administered immediately before meals in improving the appetite and stimulating the powers of digestion. These drugs fail to act as purgatives for two reasons; first, because many of them contain astringent principles, and, secondly, because they are commonly taken in small doses mixed with sherry or gin, or some other form of alcohol, which, by dilating the blood-vessels of the mucous membrane of the stomach, facilitates absorption.

Bucheim and other observers, both in France and in Germany, at one time maintained that the action of saline purgatives was due solely to increased peristalsis, and even went so far as to suggest that the watery evacuation was the result, not of increased secretion from the intestinal mucous membrane, but was simply the fluid in which the salt was administered or with which it came in contact in the alimentary canal. This theory is now exploded. It is true that purgative salts do not produce catharsis when given in a concentrated form to animals fed for some days previously on absolutely dry food, but this is due not to the absence of water in the alimentary canal, but to its deficiency in the blood.

Every clinical observer is aware of the fact that the natural purgative waters fail to exert their characteristic action when the patient is confined to bed, and from his recumbent position is less favourably placed for the passage of the fluid into the intestines than when he is following his ordinary avocations. It is also a common experience that in these cases the action of the aperient is materially assisted by massage of the abdomen, which facilitates the passage of the fluid through the pyloric orifice. At Carlsbad and other places, where aperient waters are drunk, the patient is instructed to walk so many hundred yards after each cup of the beverage, and this undoubtedly greatly assists the progress of the fluid down the intestinal tract.

There is no doubt that the effect exerted by bitter waters on the stomach is beneficial quite apart from the purgative action, and it is a common experience that patients whose breakfast ordinarily consists of a cup of tea and a piece of dry toast find that they can eat a good meal and digest it after a glass of Hunyadi Janos water sipped slowly whilst dressing.

With regard to the purgative effect, the bitterness of the water is responsible for its excito-secretory action, whilst its low diffusibility impedes the re-absorption of the fluid. As a joint result of the stimulated secretion and the diminished absorption there is a largely increased accumulation of fluid in the intestinal tract, which, partly from the effects of gravity and partly from a gentle stimulation of the peristaltic movement excited by distension, reaches the rectum and produces a copious and comfortable evacuation.

Some saline purgatives affect the peristalsic movements so slightly that they are powerless to give the secreted fluid the necessary impetus downwards, the result being that there is a risk of re-absorption with the attendant dangers of griping and discomfort. It is rarely expedient to employ a single member of this group, it being found by experience that much better results are obtained by judicious combinations, such as occur in the natural purgative waters. The mode of employment of an aperient water materially influences its action. In the case of Hunyadi Janos water, the member of this group which I most commonly prescribe, I direct the patient to dilute half a tumblerful with an equal quantity of boiling water and to sip it slowly whilst dressing in the morning. The result is that there is one copious and easy evacuation immediately after breakfast and no further trouble during the day. The dose can be regulated to a nicety, and it can be taken day after day and month after month without the slightest risk of exciting a catarrhal condition of the intestines.—*Medical Press and Circular, January* 8, 1896, *p.* 26.

46.—THE USE OF ANTISEPTICS IN THE TREATMENT OF INFANTILE DIARRHŒA.

By W. Soltau Fenwick, M.D., M.R.C.P.,
Research Scholar to the British Medical Association, Assistant-Physician to the Evelina Hospital for Sick Children.

[The following is taken from Dr. Fenwick's paper :]

The various antiseptic drugs which are specially adapted for medicinal use can be roughly divided into two classes according as they are soluble or insoluble in water. Hydrochloric acid inhibits the growth of most species of bacteria when it exists in the proportion of more than 0·17 per cent. (Miller). It is probable that in its natural combination with pepsin the acid not only kills but actually digests many bacteria, and in this manner serves to protect the intestine from the action of pathogenic organisms introduced with the food. The acid has been much extolled as an efficient antiseptic in cases of infantile dyspepsia, and is usually administered either in the form of 0·4 per cent. solution or as the *Pharmacopœia* preparation of the dilute acid. Its use is contra-indicated by the presence of gastric catarrh.

Lactic acid possesses less than one-fifth of the antiseptic power of the mineral acid aforementioned.

Carbolic acid is undoubtedly one of the most powerful germicides we possess, but unfortunately its medicinal value is considerably impaired by its unpleasant taste and poisonous character.

The use of perchloride of mercury is also somewhat limited on account of its toxic properties. In severe cases of diarrhœa it has been used with success when given in doses of one-sixteenth to one-twelfth of a grain every two hours. It is rapidly eliminated by most of the excretory organs of the body.

Resorcin (metadioxybenzolum) is a crystalline powder, freely soluble in water, and possessed of a harsh, sweet taste. Its solution is powerfully antiseptic, 0·4 of the substance inhibiting the growth of all the micro-organisms which are found in the stomach and intestine. In moderate doses resorcin is devoid of toxic properties, but when a drachm or more is given at a time giddiness, headache, and sweating are apt to supervene. For these and other reasons, which will be mentioned immediately, I consider it one of the most useful remedial agents we possess for the treatment of infantile diarrhœa.

Among the insoluble aromatic compounds of the carbon series naphthalin has, perhaps, enjoyed the greatest amount of reputation. Naphthalin possesses a powerful and disagreeable smell, and in certain cases its administration is followed by renal and vesical irritation. The dose for a child is from 2 to 5 gr., either mixed with sugar or suspended in some sweet emulsion.

Naphthol is a powerful germicide when it exists in a proportion greater than 0·08 per cent. It is only slightly poisonous, but its taste and smell are unpleasant. It has been used with success in cases of infantile diarrhœa, about 2 gr. being given every four hours, either mixed with white sugar or dissolved in olive oil and emulsified.

Salol (salicylate of phenol) is a white, tasteless powder which remains unchanged in the stomach, but in the duodenum is rapidly split up into phenol and salicylic acid, the latter of which can be detected in the urine within seventy minutes of its administration. To infants 10 gr. may be administered in divided doses during the course of the twenty-four hours.

Benzol naphthol is a tasteless powder, which in the intestinal canal becomes decomposed with the liberation of naphthol and benzoic acid. This substance is not poison when given in moderate doses, and it is therefore of considerable value in cases of infants and young children, to whom it may be administered in doses of 30 grains per diem.

The salicylates of bismuth and strontium both undergo chemical changes in the intestine with the formation of salicylic acid and the corresponding metallic sulphides. The acid exerts a powerful antiseptic influence upon the contents of the bowel, and is slowly eliminated by the kidney. The sulphide of bismuth betrays its presence by the characteristic blackening of the motions. Both preparations are tasteless and insoluble, and may be given to infants in doses of 1 to 3 gr. every four hours.

Calomel is an excellent example of that class of remedies which owe their antiseptic properties to a change in their chemical composition occurring after ingestion. It is by far the most reliable remedy we possess for acute cases of diarrhœa in infants when administered in fractions of a grain at frequent intervals.

Results.—In the selection of an appropriate drug for a child several factors have to be taken into consideration which in the case of an adult can safely be neglected. Substances which possess a nauseous taste or offensive smell are hardly tolerated by a child, even when mixed with an excess of sugar; and hence naphtholin, β-naphthol, and iodoform can seldom be prescribed with success. Again, absorption takes place so readily from the alimentary tract of an infant that it is often impossible to obtain any degree of intestinal antisepsis from the use of perchloride of mercury and the phenol compounds without running great risk of poisoning the patient in the process. Lastly, powders, like charcoal, which have to be administered in large bulk in order to produce any effect at all, are obviously inapplicable to the treatment of disease in infants. In the majority of cases, therefore, our choice is limited to the tasteless and comparatively non-toxic powders, such as calomel, benzol naphthol, and the salicylates of bismuth and strontium, or to the soluble antiseptics like resorcin and the acids. During the last three years I have used the various medicinal antiseptics in more than 500 cases of digestive disorders in children which have come under my notice at the Evelina Hospital and elsewhere. The results which have accrued from their use in cases of infantile diarrhœa have been so satisfactory that for more than twelve months I have never once had occasion to resort either to astringent drugs or to opium, whilst in almost every instance where these latter remedies had been previously tried without effect the substitution of an antiseptic was at once followed by complete success. Acute dyspepsia is readily cured by dietetic treatment combined with the use of castor oil or an emetic. Antiseptics are only necessary when the disorder has already continued for several days, and has resisted the simpler methods. Under these conditions calomel is of the utmost value when administered in doses of one-sixth to one-third of a grain every three or four hours. Hydrochloric acid has been extolled by many authorities, but, according to my experience, the mineral acid more often does harm than good. It is most serviceable when all acute symptoms have subsided, and the child is suffering from weak digestion as the result of catarrhal process. It may then be combined with pepsin with great advantage.

It is in cases of chronic diarrhœa due to fermentation that the systematic employment of antiseptic drugs proves of the greatest value; and for this purpose the insoluble substances which act exclusively upon the intestine are usually recommended. This, however, is a mistake. The disorder always commences in the stomach, and is most easily controlled by the administration of remedies which exert their specific action within that organ. Formerly I was wont to employ carbolic acid for this purpose in all cases of infantile diarrhœa, but its hot taste and unpleasant smell, as well as the occasional occurrence of carboluria, has made me transfer my allegiance to resorcin. This drug has the advantage of being extremely palatable to children, devoid of toxic properties when given in ordinary doses and very inexpensive. According to the *Pharmacopœia*, the dose of resorcin is 1 to 5 gr., and it is probably on account of this insufficient dosage that the value of the remedy has been so much overlooked. As a matter of fact, the drug produces no ill-effects in an adult unless the dose exceeds a drachm, and I have long been accustomed to prescribe 3 gr. every four hours to infants only a few weeks old without the least ill effect.

In cases of diarrhœa the first effect of the drug is usually noticeable after the third or fourth dose, when the motions decrease in frequency and in amount, the dejecta at the same time acquiring a more natural appearance and losing their excessive fœtor. At the end of the second day the diarrhœa has generally ceased, and is not infrequently replaced by obstinate constipation. I have before me the notes of 120 cases of intestinal dyspepsia in infants and young children which have been treated in the manner described. Of these, in 53 per cent. the disorder had lasted from one to two weeks, in 34 per cent. from two to four weeks, in 10 per cent. from four to eight weeks, and in the remaining 3 per cent. for a period of more than two months. Out of the entire number in only nine instances did the diarrhœa continue after the treatment had been pursued for a week, the majority ceasing within three days. Of these nine refractory cases two were instances of cholera infantum, both of which succumbed within a short time of being brought to the hospital; in one case adults I prefer a castor-oil emulsion, made as follows:—Ol. ricini, ℥j; gum acac., ʒiij; sugar, ʒiij; ʒj.-ʒiij every hour until the stools lose their dysenteric character.

The conclusion which I have come to is that we need not pin our faith to any particular drug in the treatment of dysentery, but that we must work on scientific principles with such remedies as are suitable. Recalling to your minds the pathology as I have briefly sketched it, you will see that our aim should be to procure local cleanliness and rest for the diseased portions of the bowel. Cleanliness can be obtained by mild purgatives, the use of which should be discontinued after three or four days. When the stools are no longer "dysenteric," give small doses of some antiseptic and continue the fluid diet. Rest must be obtained by insisting on a fluid diet and by keeping the patient in bed. Pain when great may require small injections of morphia, but generally passes off when the bowel is cleared of fæces and at rest. Hemorrhage is not usually severe, but it may in some cases cause the greatest anxiety. For internal remedies ergot and hazeline are the best. Fortunately we are often able to check hemorrhage by injections into the bowel. Nitrate of silver (ʒj to Oj) forms a most useful injection and several pints may be used. Some medical men treat most of their cases of dysentery with injections, even when there is no hemorrhage. Quinine has been used freely in injections of 1-1000 to 1-5000 in America, perhaps with a view to destroy *amœbæ*. The fluid diet should be continued for at least a week after the disappearance of blood and mucus from the stools. This careful dieting is most important; if properly followed out we should not find so many sad cases of chronic dysentery.

The treatment of chronic dysentery is almost entirely dietetic. Weak antiseptics may be given, and of these the liq. hydrarg. perchlor. in ʒss dose twice or thrice daily will be found most useful. Astringents should be avoided. There is another method of treatment which I will mention. I have never seen it adopted, and do not think that there are or ought to be many cases requiring it. I refer to colotomy, practised to give rest to the bowel and to permit the direct entrance of injections into the large intestine. Reference is made to this form of treatment in the *Lancet*, 1895, p. 1578.

48.—MELÆNA NEONATORUM.

By W. MILTON LEWIS, M.D., Baltimore.

The clinical picture presented by a case of melæna neonatorum is an appalling one. An infant, apparently healthy at its birth, is suddenly seized with an attack of hæmatemesis, no warning whatever having been given, except perhaps some flatulence, hiccough, and general uneasiness. The blood which is vomited will be dark and probably clotted; the child pale, its respiration rapid and very shallow; its pulse scarcely perceptible. If placed at the breast, it will not nurse; it may lie perfectly quiet, or it may toss its limbs to and fro. If the napkin is examined it will probably now contain a pasty, tarry mass of clotted blood from the bowel. The vomiting may cease after the first attack, but the bloody stools will continue for several days, usually about one week. In many cases there is also jaundice; sometimes there is no vomiting of blood, only large bloody stools. The child will apparently have pain in the abdomen, and the abdominal walls may seem tumefied from the presence of blood within the intestinal canal. The hemorrhage usually appears within the first week of life, often within the first few hours, and usually lasts about three days. In the cases which recover, its duration is seldom more than twenty-four hours.

The diagnosis of this affection is usually simple, but the prognosis is very grave, and when we think of the amount of blood lost in proportion to the body weight we wonder that there are any recoveries at all. The rate of mortality varies, being placed by different observers at from 35 to 75 per cent. One observer, Minot, of Boston, had the very large death-rate of 84 per cent.

Of the 185 cases collected from the literature, the result was noted in 144. Of these, 98 terminated fatally, giving a mortality of about 68 per cent. The character of the labour was normal in 40 cases, abnormal in 12, and not noted in 133. Of the cases in which the condition of the infant at birth was noted, 35 in number, I found 28 healthy, by which is meant plump, strong, and apparently well, and 7 diseased. In 32 cases it was the first child. The distribution among the sexes was 65 males and 69 females, while in 51 cases the sex was not noted. The age at which the melæna began was noted in 79 cases; of these, 31 were one day or less; 34 were between one and three days of age, and 14 over three days old. The duration of the hemorrhage was noted in 57 cases; of these, 22 were one day or less, 24 from one to six days, and 11 over six days. The shortest time after birth at which melæna occurred was two hours, while the longest time was four months and a half. The shortest period of duration of the disease was three hours, and the longest five months. In 68 autopsies there was ulcer of the stomach in 6 cases; of the duodenum, in 3 cases; in 1 case each was ulcer of the ileum, rectum, and œsophagus found. In 12 cases there was injection and hyperæmia of the stomach. The same lesions of the duodenum were present in 9 cases; of the jejunum and ileum, in 11 cases; of the colon, in 12 cases; and of the rectum, in 2 cases. In 1 case it was noted that there was embolic infection of the intestine. In 4 cases the stomach was found normal, and in 5 cases the intestines were noted as normal. In 6 cases there was anæmia of all the mucous membranes; of the lungs, in 6 cases; of the heart, in 8 cases; of the liver, in 9 cases; and 8 cases each in the spleen, stomach, and intestines. There was found congestion of the heart in 2 cases, and 1 case each of congestion of the lungs, liver, and spleen. Pneumonia was found in 4 cases; nephritis, in 1 case; abscess, in 1; croup, in 2; pulmonary infarcts, in 4; antelectasis, in 2; teleangeiectasis, in 2; ecchymosis of the body, in 8 cases; there was emphysema in 2 cases. The heart was stated to be normal in 2 cases, the lung in 1 case, and the liver in 1.

In 1 case the umbilical vein was noted as filled with blood, in 1 case the foramen ovale was obliterated, and in 1 case the ductus choledochus was impervious. In 2 cases the tissues were noted as bloodless; general hemorrhage into the abdominal viscera was recorded in 1 case. There was 1 case of fatty liver, and in 1 case the spleen was ruptured; in this case the abdominal cavity was filled with blood. The fœtal apertures were found open in 2 cases.

Micrococci were noted in 1 case, and in 2 cases it was especially noted that part of the intestinal canal was injected; a succeeding portion was pale and bloodless, while still lower down in the intestinal canal there was again seen great injection of the tissues. In 1 case there was fracture at the base of the skull. Hemorrhage into the pons Varolii, fourth ventricle, and medulla in 2 cases. Hemorrhage and extravasation of blood into other parts of the brain in 8 cases; congestion and hyperæmia in 7 cases; meningeal inflammation in 4 cases; purulent meningitis in 2 cases; brain soft and mushy in 2 cases. In 1 case the sinuses were gorged with blood, in 1 case cerebral œdema, and in 1 case anæmia of the meninges. In 1 case the large ganglia at the base of the brain were enlarged and pale-yellow in colour, while in two cases the condition of the brain was found normal. In three of the autopsies nothing abnormal was found, but in these cases the brain was not examined.

The treatment of this disease may be dismissed with a very few words. Rest is a very important element in therapy and should be promoted. Some have recommended the external application of ice, but that seems to be quite irrational, as the effect would be to contract the superficial vessels and send still more blood to the internal organs. It would seem more in accordance with the laws of physiology to give ice internally, which may easily be done by cracking it up finely, and giving it along with the milk. I think it better that the child be fed from a teaspoon in small quantities, rather than to allow it to nurse, as the act of sucking would tend to increase the hemorrhage. Some remedy to contract the smaller blood-vessels and capillaries would seem to be indicated. Wrapping in cotton wool, and the judicious use of hot bottles to keep up the body temperature, will be suggested by the collapsed condition which is often present.—*New York Medical Journal, February* 1, 1896.

49.—THE TREATMENT OF GALL-STONES.

[The following is taken from a leading article in the *Therapeutic Gazette*, January 15, 1896 :]

Recognising the etiological factors, it now becomes our duty to oppose them, and we have the following indications to fulfil :—1. By causing a free secretion of bile to produce a rapid flow of fluid, which shall be normally liquid and probably normal in its constituents. 2. By the use of alkalies to antagonise the development of acid tendencies and to aid in the solution of mucus. 3. By regulating the diet prevent those hepatic and systemic disorders which tend to the formation of stone. 4. As catarrhal states are often due to or aided by bacterial infection, to produce intestinal asepsis as far as possible.

The normal secretion and flow of bile is best brought about by exercise of a gentle and wisely directed nature, taken continually and evenly, and particularly those forms of exercise which call into play the abdominal muscles and diaphragm or cause hepatic movements. The chief and best of these is horseback riding, or, if the patient is too feeble for this, massage should be resorted to, the hypochondrium being well but gently kneaded and rubbed daily for a considerable period of time. If the liver seems very torpid calomel may be given in small divided doses of a fraction of a grain several times a week, or nitro-muriatic acid may be more rarely used. In other instances, where there is reason to believe that the flow is sluggish and the bile not sufficiently alkaline, that catarrh and putrefactive tendencies are present, the administration of benzoate of sodium or salicylate of sodium, in 10 or 20 grain doses, will result in increasing the flow, increasing the alkalinity overcoming the catarrh, and tend to arrest intestinal putrefacfaction. If the catarrhal process is very marked, chloride of ammonium will act even more satisfactorily. This treatment seems especially valuable when the stones that are passed are very dark in colour, indicating that much pigment and little cholesterin is present. In respect to the use of alkalies, the patient should drink freely of those mineral waters which will provide alkaline substances, such as Contrexéville, Vichy, and Kronenquelle, and it is useful in many such cases to relieve any tendency to constipation or duodenal catarrh by the administration of hot Carlsbad water before breakfast daily. In the matter of regulating the diet, all rich or fatty foods are to be prohibited. Meat should be used in moderation, preferably white meats, and green vegetables largely eaten.

The catarrhal condition, associated with marked bacterial infection, as may be evidenced by some febrile movement, is best controlled by the use of turpentine, chloroform, and ether, given internally, and accompanied by the application externally of hot poultices to the hepatic area. These poultices may or may not be fortified by mustard, and when removed should be replaced by a warm pad to prevent any chilling of the surface of the body.

Of the internal remedies just named, turpentine is the most useful, since it liquefies mucus, aids the flow of bile, and is thought by some physicians to cause the expulsion of the stone by stimulating the walls of the ducts, and that it dissolves the stone. Further than this, its continual use seems to prevent the formation of stone. Ralfe states that it is best given as follows:—Ol. terebinthinæ, ♏v.; syrup. acaciæ, f ℥ ss.; sodii sulph. carbolat., gr. xx.; spt. ætheris composit., ♏xv.; aquæ menthæ piperitæ, q. s. f ℥ j. To be taken twice or thrice a day.

We would prefer adding compound spirit of lavender instead of peppermint-water. If the mixture cannot be retained by the stomach the turpentine may be given in capsule and followed by a draught of milk.

Finally, a most important factor in the prevention of gall-stone formation in susceptible persons is the avoidance of exposure and wet, and, if possible, a residence in a sunny climate during winter months.

DISEASES OF THE URINARY ORGANS.

50.—ELUSIVE KIDNEY DISEASE.

[The following is taken from a leading article in the *Medical Record*, December 7, 1896, p. 809:]

Interstitial nephritis, often the most misleading and elusive of renal disorders, develops insidiously, perhaps by jumps and starts, and in unexpected ways. It is one of the most stealthy of all diseases in its approach. Dropsy does not occur, though there is often œdema of the eyelids and sometimes of the ankles. Disturbances of the nervous system are very marked and appear early. The most amiable and sanguine dispositions may become morbidly depressed, peevish, suspicious, and impatient, with sometimes hyper-excitation of the nervous system almost maniacal in character, and suicidal tendencies may also develop. In no form of kidney trouble are uræmic accidents (Charcot) and hemorrhages (Millard) so common. Hemorrhages may be from the nose, the stomach, and into the cranial cavity. In 111 cases of death from apoplexy at St. George's Hospital, interstitial nephritis existed in 55. Apathy and semi-torpidity of physical and mental powers occur in the advanced stages. Coma is more likely to exist than epileptic seizures. Patients often appear to get well after acute attacks; then all the symptoms return, weakness increases, and death may take place from pure exhaustion. The duration of the disease cannot be known, since there is no necessary relation between the development of the kidney lesions and the appearance of the symptoms. Certain foreign writers seem to believe that the limit of duration lies somewhere between ten and twenty years.

The urine may be examined at frequent intervals for days, weeks, and months, without albumin being discovered. The quantity of albumin is always small, and often in fully developed cases it is temporarily absent altogether. When detected it is usually in the evening urine. Dieulafoy regards albuminuria as a very unreliable symptom of Bright's disease. In sixty cases under treatment in his wards during recent years albuminuria was absent in one-fourth. That nephritis really existed was often proved post-mortem. Millard calls it crude to base a diagnosis upon its presence, and quotes Semmola:—"We must absolutely give up the idea still current in practice that albuminuria must always exist with nephritis." And Francis Delafield states that though albumin is a very common symptom of renal disease, it is least abundant and least constant in certain special forms of it, of which interstitial nephritis is one. But how about specific gravity? Is it unaltered? Does this also defy all preconceived opinions? Listen again to Delafield, in *Pepper's System of Medicine*:—"Atrophied kidneys give rise to a great variety of clinical histories. It is impossible to describe all the ways in which the disease may begin and run its course, but some of them may be enumerated." Ten such ways are thus described. This is one:—"For several months the patients do not feel well; the appetite is lost, there is nausea, occasional vomiting they become pale, anæmic, do not sleep well at night, are irritable and easily worried, and are troubled with headache. The urine continues normal, or is of low specific gravity, or contains a little albumin. They suddenly become worse and the regular symptoms are developed." In pronounced cases specific gravity ranges from 1·010 to 1·016. With heart failure and consequent diminution of the volume of urine the specific gravity rises somewhat, and may even approach again the normal standard, after having remained for years constantly reduced (Purdy). Delafield says the urine is regularly increased and of low specific gravity (others say, "usually," "generally,") except in uræmic attacks, when it is diminished; uræmic attacks may come on when the patient is passing from thirty to forty ounces of urine of a specific gravity of 1·020. The urine itself is clear, often pellucid, and sometimes soapy-looking. Tests show that it has lost much of its toxic property. Deposits are remarkably free from cellular elements. When epithelia appear, it is the exception and not to be expected (Millard). The regular and absolute amount of urea suffers diminution from the beginning. Phosphates are also diminished, almost constantly (Purdy). Uric acid is increased and calcium oxalate, both of which are often to be noted together. Occasional hyaline casts are often the only evidence, as far as the urine is concerned, of interstitial nephritis. Hypertrophy of the left ventricle of the heart is a frequent complication; but Dr. Delafield has not found it in as large a proportion of cases in New York as it is described by English and German writers.

The most important symptom is constant weakness. Next in order is headache. Then comes digestive disturbances, anorexia, nausea, vomiting, flatulence, and so-called bilious attacks. Intractable rheumatic pains and persistent neuralgia are both highly suggestive of interstitial nephritis. Ralph states that this intense pain has often led him to a correct diagnosis. It is well known that disorders of vision are common, with or without discoverable lesions. Minor symptoms are:—Auditory troubles, vertigo, itching of the skin, muscular twitchings, cramps in the calves, especially at night, and sensitiveness to cold, especially of the lower limbs.

What to do when this elusive kidney disease is strongly suspected or actually discovered? Remove all strain from the heart, arteries, and kidneys. Life must henceforth be quiet, yet interesting, with gentle but not excessive exercise. Cold and damp are distinctly dangerous. The ideal condition demands a residence in some warm, equable climate from November till April. Treatment is hygienic and symptomatic, combining knowledge and experience and that superior insight known as common-sense.

51.—TREATMENT OF ACUTE BRIGHT'S DISEASE.

By W. M. Ord, M.D., F.R.C.P.,
Senior Physician to St. Thomas's Hospital.

[The following is taken from Dr. Ord's third lecture on renal diseases :]

Having recognised the disease, you have to treat it. Here, in the first place, you put the patient to bed in a warm room with plenty of warm clothing, and you place him on rather a limited diet. Probably a diet of milk somewhat diluted is the best, provided always the patient can take it, provided also the patient is not vomiting, or so much distressed as to be unable to take even that kind of food. Otherwise, give him such watery liquids as may assuage thirst and be agreeable. But, on the whole, I think it is well not to give the meat juices. The meat juices contain extractives—contain, in other words, matters which represent broken-down albuminoid matters, such as ought to be excreted, such as probably, by their accumulation in the blood, tend to intensify the poisoning of uræmia. If there be any truth in the theory of uræmia, as I fully believe there is, it is clearly a mistake to introduce into a body already tried in its proper excretory organs more matter to be excreted. Stimulants are also undesirable. You will understand that in the acute stage of this disease the patient is not capable of taking much food, and may be fed, therefore, in the safest way possible. It is, next, desirable to give aperients—aperients chiefly of a saline kind—in order, if possible, to produce watery stools and matters dissolved in them by the bowel to make up for the deficient action of the kidneys. Here you should use such things as alkaline sulphates, sulphate of magnesia, or sulphate of soda and Rochelle salt, or compound jalap powder. Probably, if you want to get a rapid action, a good dose of compound jalap powder is as good as any. On the whole, I think it better not to give mercurials. Supposing that pain and distress in the loins be very great; supposing also that we have a very early setting-in of cerebral symptoms and a great diminution in the quantity of the urine excreted, it may be desirable to act locally on the kidneys; in violent cases one may use either leeches or wet cupping of the loins, drawing off on an average eight or ten ounces of blood; or we may bleed at the arm, where there is very great arterial tension. On the whole, I think, if the patient can bear it, wet cupping—I mean the application of cups, with the abstraction of blood at the same time, over the kidney—is about the best thing. In such severe cases we often get a good deal of benefit by dry cupping, applying cups without cutting the skin, to draw blood considerably to the surface; or we may use counter-irritation in the form of mustard poultice or mustard cloth, but not cantharides. Cantharides, it is well known, when applied to the skin for blistering purposes, will be in part absorbed, and may set up renal irritation on their own account, so that, of course, it would not do to use them in the case of kidney inflammation; it would be intensified. I think if you have for your local applications leeches, the cups, wet and dry, and mustard variously applied, you have sufficient armament. After applying mustard to the skin you can apply hot poultices. In the same way you can apply hot poultices after the use of leeches.

Then we come to another way of medication, by way of diaphoresis. The skin has ceased to act and is, as you have seen, tumid and altogether altered—anæmic as well as tumid. Well, can we act on the skin and so draw blood to the surface? We may do this by hot baths; we may do this still better by hot-air baths, placing the patient under some kind of cover which is not in contact with his skin, of course leaving his head out and covering his cage over with some material which would tend to keep in the heat and then introducing hot air by means of a lamp. You keep a patient so placed for, say, twenty minutes to half-an-hour, until you have obtained a good perspiration. If, at the end of half-an-hour, you have not got a good perspiration and the patient is getting oppressed, you had better discontinue, at any rate for a time. When a good perspiration has been obtained for ten minutes or a quarter of an hour, sponge the patient down with tepid water and cover him over with blankets, or you may pack him. In that case you strip him and put round him, or on his front surface, according to his condition—better round him if you can—a sheet wrung out of tepid water, and then you treat him like a mummy. You roll him round with blanket after blanket until you have got five or six layers around him. Of course you leave his head out, and there he is left to perspire, which he generally does after some time, and he may be kept in this condition for one, two, or three hours, according to the effect upon him, which, of course, would have to be watched. If he gets thirsty, give him a little tepid water to drink; in fact, the drinking of very warm water is an extremely useful thing in determining perspiration.

Next, you may again give him diaphoretic drugs. Some of us are very fond of acetate of ammonia and of ammonia salts generally, of spirits of nitrous ether, jaborandi, and so on. There are some who believe that a very good plan is to use diuretic medicines, to sweep away the obstructions formed in the kidneys. Some do this by giving merely large quantities of liquid, some by using simply such diuretics as acetate of potash, digitalis, and so forth.

The question of sedatives is an important one because of the insomnia; there is headache in the first place and insomnia in the second, and these often become very prominent symptoms and demand treatment. Well, now, you must understand that you do not for this purpose give opium. Opium is in these cases a most poisonous drug and should always be avoided. For the insomnia probably the best drugs that we have are bromides, given in doses of from 20 to 30 grains.

Where headache and insomnia are very bad it may be desirable, supposing there be much arterial tension—which is to suppose what is almost always present—with the bromide may be given chloral hydrate, in doses of 10 to 20 grains. I think probably these are the best sedatives that I know of in such cases.—*The Practitioner*, March, 1896.

52.—CHRONIC INTERSTITIAL NEPHRITIS DURING EARLY LIFE.

By Henry Ashby, M.D., F.R.C.P., Manchester.

[The following cases recorded by Dr. Ashby are of considerable interest. It would be interesting to know whether these children had suffered from any acute infective illness. Acute nephritis has been known to terminate in the red granular kidney.—E. F. T.]

Cases of red granular kidney (chronic interstitial nephritis) are not commonly found during the earlier years of life. This form of kidney disease belongs rather to middle and advanced life, when various degenerative changes are apt to take place in the tissues as the result of gout, alcoholism, or some other causes. Cirrhosis of the liver and granular kidneys are occasionally found in children who are near to puberty, without any definite cause being discovered, while it is usually possible to exclude gout and alcoholism.

I have met with only three cases of contracted granular kidneys among children, which were verified post-mortem, though in several others I have suspected their presence during life. Two of the fatal cases were in girls ("Ashby and Wright's Diseases of Children," 3d. ed., p. 560) aged 10½ and 11½ years, and one in a boy (see case below) aged 12 years. In the first place the kidneys together weighed 1½ oz., in the second case 3 oz. (R 2¼ oz., L ¾ oz.), and in the third 2½ oz. In appearance these kidneys closely resembled one another, being small, tough, reddish in colour on section, the cortex more or less wasted. The capsules peeled off with difficulty, leaving a typical granular surface. On microscopical examination, large tracts of fibrous tissue were visible; there was an infiltration of leucocytes between the tubules, and many atrophied glomeruli, surrounded by fibroid tissue, were seen. Some of the tubules were dilated, as the result of pressure or blockage. In all the cases there was increase in the weight of the heart, namely, 8 oz., 8¾ oz., 8 oz., respectively; the walls of the left ventricle were hypertrophied, with no marked dilatation of the cavity, and in one the mitral valves were thickened from an old attack of endocarditis.

All three cases came under notice for the first time a few days before the fatal issue. In one the history was very imperfect. In two of the cases there was a history of severe frontal headache, thirst, and frequent passage of urine for some months or more before coming under observation. In one case there was a history of fits for two or three months before admission. In one there was œdema during the last two or three weeks of life, in the other two there was no œdema from first to last. In one case no urine was obtainable; in two the urine during the time they were under observation varied from S. G. 1,010-1,015, the albumen amounting to about one-half the volume on boiling.

With regard to causation, the only fact of interest elicited was that, in one case, the father, who was dead, had been a confirmed dipsomaniac, but the girl herself had not taken alcohol. In connection with this it is interesting to note that in one of my cases of cirrhosis of the liver, occurring in a girl of 12 years, the mother was a confirmed drunkard, though the girl had never taken alcohol. In one of the cases the patient was suffering from late rickets, and indeed had been admitted to hospital for an operation for genu valgum. In a somewhat similar case of late rickets I found albumen in large quantities in the urine; the boy suffered also from thirst, and there was frequency of micturition. He probably had granular kidneys.

Arthur G., aged 12 years.—His friends state that he has suffered from a discharge from the left ear, ever since an attack of measles when three years old. It is uncertain if he has had scarlet fever. He had chorea several years ago. For the last three months he has "always been eating and drinking," has been dull and unlike himself, and has suffered a good deal from severe frontal headaches. A month ago he had a fit, followed by several others the next day. The mouth was drawn during the fits, and the left side was especially affected. Three days ago he had another series of fits.

Admitted October 14, 1895. It was noted that he was a badly nourished, well-developed boy. There was a purulent discharge from the left ear, and almost complete deafness. There was no paralysis, but it was thought that the grasp of the left hand was a little stronger than that of the right. There was a faint but well-marked systolic bruit at the apex of the heart, with some hypertrophy of the left ventricle and a heaving impulse. Pulse not easily compressible, 132 to the minute. Has passed plenty of urine of a light colour, S. G. 1,010, containing much albumen. No optical neuritis or retinal changes.

October 23.—Has had six or eight fits to-day, during which he became unconscious, with eyes turned to the right, tonic spasm of limbs, head retracted, and muscular twitchings of the face. He remained for some time afterward stupid and dull. His headache has been very severe.

October 24.—Has vomited several times to-day, has been unable to sleep on account of headache, and has appeared to wander at times. His breath has an ammonical smell.

October 27.—No fits, no vomiting, but he is delirious, shouting and talking constantly; he appears to recognise those about him, but behaves more or less like one under the influence of alcohol. Albumen the same. A good deal of diarrhœa.

October 28.—Death, preceded by unconsciousness for 24 hours. There never was any œdema.

P. M. No œdema anywhere. Lungs and pleura are normal. Heart weighs 8 oz.; the wall of the left ventricle is hypertrophied, but there is no marked dilatation of any of the cavities. Edge of the mitral valves much thickened; heart muscle pale. Liver and spleen normal. Kidneys weigh 1¼ oz. each; capsules strip with difficulty, leaving a granular surface. On section the cortex is seen to be somewhat narrow. A microscopical examination of the kidneys show tracts of fibrous tissue containing compressed and degenerated glomeruli and tubules. The tubules everywhere appear dilated, with their epithelium flattened, presumably as a result of their having been over-distended with urine, in consequence of obstruction lower down in their course. The glomeruli in places were degenerated and surrounded by fibrous tissue. The appearances suggested a cirrhosis of the kidney, due to a chronic interstitial inflammation.

—*Pediatrics*, *March* 1, 1896.

53.—THE NATURE AND TREATMENT OF GOUT.

By Professor **Kolisch**, M.D., University of Vienna.

It is now generally acknowledged that any disturbance in the physiological function of nutrition is a potent factor in this disease. A large number of theories, such as abnormally diminished alkalinity of the blood, high acidity of the urine, a morbid condition of the kidneys, or a disturbed state of the nerve system, have all been in turn accused of the morbid condition. It is undeniable that a urate diathesis exists in the gouty condition, but the preceding morbid changes in the physiological disturbance appear to be due to the breaking up of nuclein, and the formation of alloxurine bodies.

It has been clearly demonstrated that the gouty kidney and the lead-poisoning kidney are both labouring to eliminate poisonous substances, and have morbid changes in common. For experiment the poison of gout was selected from the alloxurine bases, which was the probable cause of the urate diathesis. Tandler injected 0·01 gramme of xanthine, which produced in animals changes in the kidneys, and which Professor Paltauf and Dr. Albrecht declared to be identical with the lesion of the kidney familiar in gout. The alloxurine bases, therefore, appear to be the problematic poison that produces the renal lesion which bears a close relation to lead-poisoning in experimental demonstrations. Instead of the present uratic diathesis applied to the gouty condition, it would be more appropriate to call it the alloxurine diathesis.

The lecturer is of opinion that different authors have established names in accordance with the stage at which the gout was presented to them. Each one found a different quantity of uric acid, which he elucidates according to the theory he had most at heart. It is clear to the casual observer that the alloxurine bodies would vary according to the stage of the disease, and constantly change the quantity of uric acid eliminated, which is the characteristic symptom of the disease. The proportion of uric acid would alter according to the base with which it combined. As long as the kidneys performed their function in a normal manner, they would produce more uric acid in proportion to the nucleïn reduced. After a certain point is reached the kidney appears to become exhausted, the uric acid is reduced in the urine, while the decomposition of the neucleïn remains normal. At this stage, if the urine be carefully examined, it will exhibit the gouty acid character with increased alloxurine bases in the usual gouty symptoms. By the lesion of the kidney, the transudation of the poisonous bases reduces the elimination of uric acid. This circulus vitiosus still proceeds till the uric acid almost disappears, giving all the appearance of a shrunken kidney.

In the beginning the increased destruction of the nucleïn in the organism produces intermediate substances which assists to form the poisonous agent of the kidney. In the course of time, the abnormal transposition seriously injures the function of the organ till the circulus vitiosis is formed, which may be described as a typical example of auto-intoxication. From this idea, all the symptoms of gout may be explained in the chronic condition, while the acute attacks cannot be accepted as a new disease, but rather an outburst of the chronic process with the acute phenomena and a large decomposition of nucleïn. The outcome of this is increased elimination of alloxurine bodies, and the appearance of albumen and leuco-cythosis in the urine.

The therapeutic treatment of gout, according to this view, would not encourage us in entertaining an application of specific drugs. On the other hand, the therapeutist should endeavour to increase the breaking up of the nucleïn, and favour, as far as possible, the transformation of the decomposed products to uric acid. The latter part points to the use of alkaline therapeutics, because it promotes the formation of uric acid, which encourages the innocuous function of the kidney.

In cases where the kidneys are already functionally injured, guiding must be our care. With regard to the diet, the excess of albuminoid food must be carefully guarded against, as this form of diet rapidly increases the leuco-cytocis in the alimentary canal that finally augments the nucleïn product. A moderate use of albumen is not contra-indicated, yet tissues rich in cellular matter, such as nucleïn, should be avoided. Boiled meat may be allowed, as the kidneys eliminate the noxious extractive material, but the soup prepared from the liquid it has been boiled in should not be used. Carbohydrates are innocuous, and as a substitute for albumen fat may be prescribed. Milk and egg in some form is also good, because the nucleïn does not split up into alloxurine bases. Of the vegetable kingdom all may be allowed except asparagus, which should be strictly forbidden. Alcohol should be also prohibited. In daily exercise of the body over-exertion should not be encouraged but carefully guarded against, as this greatly increases the splitting up of the nucleïn. An early diagnosis of the disease is essentially necessary before a satisfactory therapy can be established. To accomplish this the blood should be examined, and the increased elimination of the corpuscles with an outbreak of the usual symptoms may enable the observer to check its progress or correct the morbid process.—*Medical Press, December* 18, 1895.

Surgery.

GENERAL SURGERY AND THERAPEUTICS.

54.—A BRIEF NOTE ON ANTISEPTIC SURGERY.

By C. B. Lockwood, F.R.C.S.,
Assistant Surgeon in St. Bartholomew's Hospital.

[We quote extensively from Mr. Lockwood's important paper, although it seems to us hardly probable that the application of the scientific tests recommended will be very generally adopted. While no detail is too minute for consideration to forestall an infection of the wound, there is one exception made, and that is in the case of the germ-bearing atmosphere, which receives scant attention.—E. F. T. :]

The most simple and reliable test of asepis is a sterilised tube of peptonised broth. This is used with the usual bacteriological precautions. Inasmuch as these are the same precautions as are used every day by aseptic surgeons, it is not necessary to dilate upon them. Equipped with a few dozen culture tubes and Hearson's incubator, any surgeon can easily learn whether he succeeds in disinfecting his hands, the skin of the patient, the silk, the sponges, the towels, and other materials. I am happy to see that this is now being done by a few surgeons. Doubtless the example will, after a while, be more extensively followed.

The term aseptic is used in so many senses that it is necessary at the outset to inquire its meaning. Whatever the word may have meant in the past, it is now applied to surgery which aims at the absolute exclusion of bacteria from wounds, or, in other words, at sterility.

Surgeons who aim at asepis, or sterility, endeavour to reach their goal in several ways—some by using dry or moist heat for all instruments, dressings, and materials. This is ofttimes called *the* "aseptic method." Others rely upon chemicals for attaining sterility. This is sometimes called the antiseptic method. And, last, there are surgeons who use both heat and chemicals. This is called the mixed method. Now, it is quite clear that so long as we confine the use of the word aseptic to the end to be attained there can be no dispute. Surgery which excludes all bacteria must be aseptic, since bacteria alone can cause sepsis. But it is by no means so clear, when we speak of methods, that the dry and moist heat method ought alone to be called "the aseptic method." On the contrary, that designation ought to be kept for the method which really does what it professes to do, namely, exclude bacteria. Indeed, I myself have yet to meet with a pure aseptic surgeon, in the dry and moist heat sense. Those with whom I am acquainted use chemicals—at least, for the disinfection of the skin ; and, from what I have seen, their use might advantageously be extended.

The position of those who rely upon chemicals for obtaining asepsis seems much more consistent. The earlier work upon the germicidal or disinfecting properties of such chemicals as carbolic acid and corrosive sublimate seemed to show that they might be relied upon to kill bacteria in a few seconds, although very dilute solutions were used. But of late our faith in some of the most favoured chemicals has been rudely shaken. Most of our chemicals are also open to another objection which greatly detracts from their germicidal properties. Both sublimate and carbolic acid combine with albumen to form compounds which are quite inert. In consequence of this considerable quantities of either of these drugs can be added to culture media without spoiling them for the growth of bacteria. My own attempts at the disinfection of the human skin, septic ulcers or sinuses, are exactly what one might expect from these laboratory experiments. Indeed, I have become sceptical whether it is possible with chemicals to disinfect an ulcer or sinus.

But although it is so difficult to kill bacteria with chemicals, nevertheless there is abundance of evidence to prove, and it is universally admitted, that small quantities of sublimate or carbolic can delay or even prevent the multiplication of bacteria. For instance, Mr. Percy Evans found that staphylococcus aureus ceased to grow in broth when sublimate was present in the proportion of 1 in 50,000. This result is much better than my own with skin bacteria, but, nevertheless, it may be conceded that only a small quantity of chemical is needed to retard bacterial growth. Quite dilute chemicals can also be relied upon to prevent contamination from the atmosphere. So that sterilised silk or instruments are protected for some hours when immersed in dilute carbolic lotion. I myself never use lotion stronger than 1 in 40 for this purpose, and usually employ 1 in 60.

Although chemicals are such slow and inefficient disinfectants, yet we possess in heat one which is absolutely reliable. Even tetanus spores are killed after five minutes' exposure to steam at 100° C. (Kitasato). Anthrax spores were killed by Koch, Von Esmarch, and others by exposing them to steam at 100° C. for five minutes. These experiments were, of course, done under the most favourable conditions, the spores being thoroughly exposed to the heat. The pyogenic cocci and the none-spore-bearing bacilli are killed much quicker than spores.

Dry heat is also an efficient mode of sterilisation. It is used every day in the laboratory to sterilise glass apparatus and cotton wool. The high temperature which is required and the time which the process takes have, perhaps, stood in the way of the general adoption of dry heat.

Thus I have gradually learnt to rely upon moist heat for the sterilisation of instruments and materials, and upon dilute chemicals for keeping them sterile. Chemicals, however, must be used for the disinfection of the skin, of sponges, and of septic wounds, sinuses, or ulcers. These afford some of the most difficult problems in aseptic surgery. I propose to refer to them at greater length presently. For sterilising instruments with boiling water a cheap and simple apparatus is all that is necessary. A large enamelled saucepan can be bought for a few shillings, and is quite efficient. The instruments are boiled for fifteen minutes. The addition of a teaspoonful of washing soda to each pint of water is advantageous, as it removes grease and albumen, and prevents rust. Most of our instruments are now nickel plated, and bear this treatment very well. As a rule the instruments are taken direct from the boiling water and put into a dish of 1 in 60 carbolic lotion. This dish, as well as all the utensils used at an operation, ought to be sterilised the same as the instruments. There are some who imagine that a washing with 1 in 1,000 sublimate lotion or 1 in 20 carbolic lotion is sufficient to disinfect the dishes and bowls. But this, to say the least, is very doubtful. Boiling, upon the other hand, is certain. Oftentimes after sterilisation the instruments have to be transported to the place where the operation is performed. I myself am accustomed to pick the instruments out of the boiling water and wrap them at once in 5 per cent. carbolic gauze. An ordinary outside dressing is the most convenient for this purpose, and may be used afterwards for the outside dressing of the wound, after the instruments have been taken from it and put in lotion.

After the instruments have been put in lotion, I never allow anyone else to touch them. The hands are so hard to sterilise and keep sterile that the fewer who touch the instruments or materials the less the chance of infection. Of late we have reached a very fair degree of certainty in the disinfection of the hands by cutting the nails quite close, washing and scrubbing the hands for three minutes with a sterilised scrubbing brush in soap and hot water, and then soaking them for two minutes in a 1 in 500 solution of biniodide of mercury in spirit. Ordinary methylated spirit does for the purpose. Biniodide of mercury has twice the germicidal power of sublimate, and the spirit makes it spread over the surface of the skin and penetrate its depths. Biniodide of mercury has another feature which renders it a most valuable disinfectant and antiseptic. It does not combine with albumen. Thus a mixture of biniodide lotion and blood remains clear and translucent, without any precipitate; and a wound washed with it undergoes no alteration, but looks as if it had been washed with water. Most surgeons know the pickled appearance of a wound after it has been washed with carbolic or sublimate lotion.

To test the success of our attempts at sterilising the skin we are accustomed, during the operation, to cut off a small scrap and drop it into the culture medium. When first this test was begun the failures were very common. Now, with better methods, and, more especially, with greater care and pertinacity in using those methods, the results are beginning to be much more uniform. The other day the skin of the surgeon, house surgeon, sister, nurse, and patient were all aseptic, and such good results are beginning to be quite frequent. The absolute necessity of surgeons using such tests is fully exemplified by these results. They have led to a marked improvement and increased care.

The disinfection of the patients' skin is one of the hardest problems we have to solve. Any method of skin disinfection must begin by taking the grease into account. After the skin has been shaved and thoroughly scrubbed with soap and hot water, ether or turpentine may be used for the extraction of the grease. After this has been done the same solution of spirit and biniodide of mercury (1 in 500) is applied as was used for the hands. If this were left on for hours it might cause eczema or blistering, so it is washed away with biniodide of mercury lotion and a dressing applied. This dressing is made of 5 per cent. carbolic gauze, and is wetted with a solution of biniodide of mercury in glycerine and water (1 in 2,000). The glycerine keeps the dressing moist, and helps the chemical to penetrate the skin.

The sponge question is one which must still, and will for many years, exercise surgeons' minds. Of course, the essential point is sterility. Our tests show that the sulphurous acid method, properly carried out, affords a very high degree of certainty. This method is well known. Briefly, it is as follows:—After the sand has been got rid of by beating, and the shell and coral removed with solution of hydrochloric acid (ʒj. to Oj.), the albumen is removed with a hot solution of washing soda in water. Sponges which have been used and are full of blood, fat, and albumen, may require several repetitions of this process. After the soda solution has been removed with hot sterilised water, the sponges are bleached and sterilised by placing them in cold solution of sulphurous acid (1 in 5) for twelve hours. This is washed out with sterilised water, and the sponges put into 1 in 20 carbolic lotion ready for use. It is exceedingly rare to find any bacteria grow from bits of sponges which have been through this process. The remarks upon the use of instruments apply with additional force to sponges. The fewer the hands that use them, the less chance there is of infection.

The essential for ligatures and sutures is that they should be sterile. Silk is almost sterile as it comes from the maker, and it seems to be quite uninjured by one or two boilings. A quarter of an hour is enough when a small quantity is wrapped upon the reel, but it is sometimes forgotten that more time is required if the silk is bulky. For reasons which have been repeated several times the surgeon cuts his own ligatures and threads his own needles. Silkworm gut, owing to its non-capillarity, has certain advantages for skin sutures, and bears boiling exceedingly well. I have, in a great many tests, never met with septic silk or fishing gut. Catgut is very useful for some purposes. That which is usually supplied is quite untrustworthy. As Reverdin points out, the threads are finished off by giving them a coating of oil. Obviously the first step in disinfection with chemicals is to get rid of this oil with ether or turpentine, or by energetic scrubbing with soap and hot water. Afterwards the threads can be sterilised by Esmarch's process. They are soaked for twelve hours in 1 in 1,000 sublimate, and then in 1 in 200 solution of sublimate in alcohol for the same period. I have frequently tested this gut and found it sterile, but I ought to add that I did not use sulphide of ammonium in my tests. After all, catgut is by no means an essential. Its sterility ought always to be suspected, and that which is about to be used ought to be rigorously tested by bacteriological methods.

A properly prepared field of operation greatly facilitates the safe transit of ligatures and sutures from their bowl of lotion to the wound. The towels which are used to surround the field of operation cannot be sterilised by chemicals. Steaming or boiling for half an hour affords absolute security, and ought not to be omitted. The presence of a septic ulcer or sinus in the field of operation is a most serious complication. An approach to asepsis may be attained by energetic washing and scrubbing, by washing with 1 in 1,000 biniodide of mercury lotion, and by thoroughly swabbing with pure carbolic acid. Gauze soaked in iodoform collodion is suitable for sealing these septic foci after attempt at disinfection. As the collodion decomposes iodoform, it is best to make the mixture when it is wanted by dusting iodoform powder upon the layer of collodion. But for a cancerous ulcer an actual cautery would probably be a more efficient disinfectant. In addition to the above precautions, some ulcers may be erased with a sharp spoon before being swabbed with pure carbolic acid.

The atmospheric bacteria can, however, be avoided in a great degree by operating in rooms in which the dust is reduced to a minimum and allowed to settle, by rapid operations, by keeping the wound or viscera covered up—this is especially important in abdominal operations—and by occasional irrigations during the course of the operation. For this purpose, dilute solutions of biniodide of mercury (1 in 2,000) have incontestable advantages.

Good results can be got with all kinds of dressings. Many of those in use fulfil the two important conditions of being sterile and absorbent. As the disinfection of the skin is still an uncertain process, it seems desirable that a certain amount of an antiseptic should also be included. Our dressings are so rarely removed before the eighth day that this chemical has to be very mild and unirritating, or it causes dermatitis. After various trials, we at present use the old-fashioned 5 per cent. carbolic gauze next to the wound, with alembroth wool, and an outside dressing of carbolic gauze and jaconet. The layer of gauze next the wound is sterilised by twelve hours' soaking in 1 in 2,000 biniodide of mercury lotion. Moreover, it seems advantageous to dust the skin with iodoform.

The precautions which have been described are evidently rendered imperative by the adoption of the two great principles of aseptic surgery. Those who are unused to them imagine that they render surgery more complicated. On the contrary, they simplify and make it intelligible, by providing a standard of perfection which cannot be misunderstood.—*Quarterly Medical Journal, January*, 1896.

55.—SURGICAL SHOCK AND ITS TREATMENT.

By Dr. W. L. Estes, Bethlehem, Pennsylvania.

I have long held the belief that surgical shock is of two kinds, or composed of two elements—the one immediate and frequently antecedent to the injury, the other secondary and subsequent. The immediate or antecedent shock is psychical, and may occur when there is absolutely no somatic injury ; the secondary and subsequent shock is the one with which the surgeon usually has to contend, and this is due to hemorrhage. So that if hemorrhage is prevented or stopped before the patient has lost any large quantity of blood, there will be comparatively little shock. I think it has been abundantly proved that immediate amputation offers the best chance of recovery after serious injuries; it is, usually, so-called shock which prevents early operations. If, therefore, hemorrhage is prevented and no great shock occurs, the operation may be done immediately and the chances of recovery are markedly improved. It seems to me the appreciation of this point in practice has greatly reduced the mortality after multiple operations. Another point of great importance is, I think, that surgeons are better physiologists and therapeutists than they formerly were. This is simply in line with the general advance in the whole science (I do not say art) of medicine. The indications for stimulation and measures for resuscitation generally are much better understood than formerly. So that if one has to combat shock he goes about it much more rationally than in former years. Instead of hastening through an immediate amputation, careful control of hemorrhage by an Esmarch tourniquet, careful antisepsis of the wound and surrounding parts are practised, and during a sufficient interval saline infusions, hot saline enemata, strychnine, and digitalis are given, and when the blood-vessels are again filled and the heart's action has recovered some of its tone and strength by careful hemostasis, the operations may be done, and, in the majority of cases, safely done.

There are two frequently employed measures of resuscitation, one of which, in my hands, has not been very satisfactory, and the other, I believe, injurious, I should like to discuss more fully. I refer to saline intravenous infusion and the use of alcohol or ether as a stimulant. The use of saline injections into the rectum has proved much more satisfactory in my practice, and I employ them very frequently. As is well known, saline solutions (even albuminous solutions highly salted) are readily absorbed from the rectum, and the introduction into the mesenteric and portal circulation, though indirectly, of this hot solution I have found a much more permanent method of stimulating a failing general circulation.

The use of alcohol as a stimulant in shock has seemed harmful in so many instances that I have quite abandoned it. The effect of ether is similar to that of alcohol, and when it is used hypodermically it intensifies the weakening effect of its anæsthetic action if an operation is to be done or has been performed.

Strychnine is now my "sheet anchor" in cases of great weakness after severe injuries. If an anesthetic is to be or has been used, especially if chloroform is the anæsthetic selected, I use digitalis as well as strychnine—I give as much as one-eighth grain of strychnine sulphate hypodermically in the course of three or four hours, when there is urgent need of stimulating the heart. I have never observed any ill effects from this large quantity. Beginning usually with one-sixtieth of a grain, the injections are repeated sometimes two or three times in the course of an operation lasting forty or fifty minutes, and continued after the patient has been put to bed, at longer intervals, of course, together with the use of digitalis and rectal injections of hot saline solution. A number of patients, apparently moribund when received, have reacted and recovered under this treatment.

As stated before, if the patient is in a condition to bear the operation, the best time to operate is immediately. Very frequently, however, the patient is not in a condition to bear the operation. In my judgment, it is very unwise to attempt multiple amputations, or indeed, any major operation, if the patient is very weak, immediately upon his reception by the surgeon. With the appliances for disinfection, dressing, and hæmostasis which every ordinarily equipped surgeon has always at hand, the operation may be deferred for a period of hours without danger of serious infection. The limit of this period must always be the very beginning of so-called inflammatory reaction in the crushed members. It is far less dangerous to operate in three or four hours, even if the patient is alarmingly weak, than to wait until infection has taken place and an interstitial phlegmonous inflammation has been established. I am convinced there can be no rules laid down to guide a surgeon in determining, in any given case, whether a patient is too weak or not for multiple amputation. One must judge the individual in every case as well as the indications of physical signs, &c. Physique, physiognomy, age, as well as the general condition of the patient, are all important factors in the problem. I most strenuously deprecate the doctrine that in very marked conditions of shock an improvement is to be expected when the patient has been anæsthetised. That this does happen in many cases is true enough, but it is only in the cases of psychical shock and not in cases of acute anæmia. It is a very unsafe rule to follow, therefore, and not to be depended upon. If some time has supervened since the injury and the patient has not been made extremely anxious by irregular or careless transportation, frightened, in other words, in my experience conditions of weakness are simply made worse by anæsthesia.

The method and manner of anæthetising are also important matters. Both of the commonly used general anæsthetics, ether and chloroform, I have found weakening. To reduce this effect to a minimum it is important to employ small doses and to continue the inhalation as short a time as practicable. In order to facilitate this I have found morphine, given in a moderate dose hyodermically, ten minutes before the anæsthesia is begun, to be a very reliable and valuable agent; it materially assists in the anæsthesia and markedly lessens the quantity of the anæsthetic required. The manner of giving the anæsthetic is also important. Forcing and smothering ought to be sedulously avoided. Whatever cone is used it should be borne in mind that in these weak conditions a liberal admixture of air is necessary. The degree of anæsthesia should never be profound, but simply to the stage of loss of reflex and partial relaxation. The anæsthetic should be entirely discontinued as soon as the suturing of the stump is begun. Usually with the use of morphine the state of anæsthesia continues long enough for the operator to comfortably place and tie his sutures.—*New York Medical Journal, February* 29, 1896.

56.—RECENT ADVANCES IN THE METHODS OF LOCAL ANÆSTHESIA.

By F. B. Lund, M.D., Boston, Surgeon to Out-Patients, Boston City Hospital.

[The following is taken from Dr. Lund's paper :]

It cannot be denied that there are certain disadvantages, which may at times assume serious proportions, connected with the administration of a general anæsthetic for certain operations. The desirability of a local anæsthetic which should be free from danger—some substance which, without intoxicating the central nervous system, should temporarily paralyse the sensory nerves supplying the operative field—has led to active endeavour to discover some such agent. To Schleich is due the credit of demonstrating that the intracutaneous injection of various drugs (not alone cocaine) in very dilute solution produced local anæsthesia. Instead of the effect depending solely upon the drug itself, the anæsthesia was found to be due to the pressure of the infiltrating fluid upon the nerve filaments, the artificial anæmia which is produced, and the comparatively low temperature at which it was injected.

For successful anæsthesia in these cases a careful technique is essential. Owing to the fact that the anæsthetic effects of the infiltrating fluids are greatest when they are injected at a low temperature, it is advisable, although not absolutely essential, to keep the bottle on ice before the operation. By beginning the injection endermatically, not hypodermatically, in the healthy skin surrounding the inflamed area, and advancing carefully upon the latter, it is to be gradually and thoroughly infiltrated. The area of infiltration must be extended not only around but beneath the inflamed tissue, so as to surround it with an area of artificial œdema, and if this has been successfully accomplished we are able to cut, curette or perform any necessary manipulations absolutely without pain. In infiltrating the wall of an abscess it must be remembered that injections into the cavity itself do no good. If there is no outlet they cause extreme pain from increased tension ; if an outlet is present, they run out without infiltrating the tissues, and therefore without producing any anæsthetic effect. Injections into the sacs of cysts or the tissues of tumours which we wish to remove are equally fruitless in their results.

It is also absolutely essential to remember that only the infiltrated, œdematous tissue is anæsthetic, and that when it becomes necessary to extend the operative field beyond the infiltrated area, the injections must be carefully continued out in the direction required, starting within the anæsthetic area. The anæsthesia begins immediately after the infiltration is completed, and lasts about twenty minutes. Every tissue of the body, nerve, muscle, skin, gland, mucous membrane, &c., is rendered anæsthetic when infiltrated in the manner described and the same effect is produced upon bone by infiltrating the periosteum, or injecting the medulla.

Nerve trunks are anæsthetised in the same manner as mucous membrane, by first touching a spot with a drop of pure carbolic acid, and through this making the injection.

Owing to the distension of the tissues produced by the injections and to the resulting compression of the smaller blood-vessels, comparatively little bleeding takes place from incisions made in the infiltrated tissues. When it is necessary to seize a divided artery with hæmostatic forceps, Schleich advises that it be touched with a pledget of cotton dipped in pure carbolic acid, in order to anæsthetise the nerve which is apt to accompany a small arterial branch.

This precaution has been so far found unnecessary by the writer.

Formulæ.—The following solutions are recommended by Schleich, the first or stronger one being necessary only for operating on inflamed or hyperæsthetic tissues. The second is used for all operations of no more than moderate extent on tissues not inflamed. The third is to be used in extensive operations when it has been necessary to inject so large an amount of the other solutions that there is danger of exceeding the limit of tolerance of the drug. No. 1.—Cocain. mur., ·2 ;

morph. mur., ·025; natr. chlor., 2; aq. dist. sterilisat. ad., 100·; adde acid. carbol. (5 per cent.), 2 gtt.; M. D. S. No. 2.—Same as No. 1, except cocaine, 1. No. 3.—Cocain. mur., ·01; morph. mur., ·005; natr. chlor., ·2; aq. dist. sterilisat. ad., 100·; adde acid. carbol. (5 per cent.), 2 gtt.; M. D. S.

The small amount of morphia present in these solutions has been added for the purpose of diminishing the pain which sometimes follows operations under infiltration anæsthesia during the time the infiltrating fluid is being absorbed, and the carbolic acid to ensure the preservation of the solution. By the use of these solutions Schleich claims to have performed such operations as ovariotomy, cholecystotomy, ligature of the common carotid, and in fact to have been able almost entirely to dispense with general anæsthesia. The general verdict has been, where the method has been honestly and carefully put in practice, that with experience many errors in the technique of application could be avoided, and the usefulness of the method considerably extended.

I have had the opportunity of practising the method in a large number of cases of minor surgery in the Out-patient Department at the Boston City Hospital. On comparing the results attained with Schleich's solutions, with those of a considerable previous experience in the use of one and two per cent. solutions of cocaine, I find that Schleich's weaker solutions are more satisfactory, for the reason probably that as the surgeon is freed from anxiety lest a poisonous dose of cocaine should be employed, sufficient solution is generally injected to thoroughly infiltrate the tissues, so that all the nerves supplying the part are anæsthetised. The operations have usually resulted in little or no pain. Certain failures have been recorded. These can sometimes be ascribed to faulty technique, or to the application of the method in unsuitable cases.

The method is not suitable, in my belief, to extensive operations in inflamed and brawny tissues, owing in large degree to the mechanical difficulty of thoroughly and painlessly infiltrating all the inflamed area. Especially is this true when the inflamed tissues are tough, calloused, and richly interwoven with fascial fibres, such as abscesses in the palm of the hand and sole of the foot in labouring men. In these cases, I have found primary anæsthesia to give the best results. On the other hand, a soft, pliable palm has often been infiltrated with perfect success.

Where the tissues are loose and spongy, even if considerable inflammation is present, the method is very successful.

In the performance of more extensive operations by this method, it has been found that the chief requisite for success is slow, careful, thorough infiltration of the tissues, the most scrupulous care being taken not to cut or roughly manipulate in tissue not thoroughly infiltrated. The surgeon must be ready to lay down the knife and take up the syringe on the slightest expression of pain by the patient. By carefully infiltrating the skin, mucous membrane and perirectal connective tissue, I was able to remove a large hemorrhoidal node by the clamp and cautery with insignificant pain to the patient. Stretching of the sphincter by the thumbs was attended with some pain, which the patient said, however, did not compare with that caused three days later by the first movement of the bowels which followed the operation.

I have been able to remove fatty tumours and epitheliomata, some of fairly wide extent, and other subcutaneous tumours, wens, &c., with the patient an interested spectator, and have been repeatedly told that the removal of the stitches at the end of a week or ten days, was more painful than the original removal of the tumour. In certain cases, however, in which the patient is of extremely nervous temperament, and cries out with apprehension before the knife touches him, I have found the method difficult to apply.

With regard to the employment of infiltration anæsthesia in major operations, laparotomies, and the like, which Schleich advises, the general verdict will, I think, be against him. In cases, however, when the condition of the heart, shock, or the danger from vomiting (for example, strangulated hernia) render ether dangerous, the infiltration anæsthesia is destined, I think, to be of immense advantage.

There is no reason why such operations as kelotomy for strangulated hernia, tracheotomy, resection of a rib for empyema, for instance, cannot be performed under infiltration anæsthesia with little or no pain to the patient, and there is every reason why, this being true, the use of ether in cases of this class where it becomes a serious complication, should be avoided.

In regard to the practical advantages of Schleich's method of local anæsthesia, then, we can say that it has increased the safety and certainty of success in the employment of local anæsthesia in minor operations, and that it has made possible the safe and comparatively painless performance of major operations in which for any reason a general anæsthetic is contraindicated or undesirable.

The advantages of the general anæsthetic in long and complicated operations, and even in short operations where muscular relaxation is desired—for instance, the reduction of dislocations, or of deformities due to fracture, &c.—are so great that we cannot agree with the discoverer of the method that it is destined almost to displace the use of general anæsthesia.—*Boston Medical and Surgical Journal, February* 6, 1896.

57.—CHLORIDE OF ETHYL.

By W. C. Daish, M.D., Ch.B., Hon. Physician to Out-Patients, Melbourne Hospital.

[The following is taken from Dr. Daish's paper, read before the Melbourne Medical Association :]

I have put together a few notes on chloride of ethyl because, as a local anæsthetic and analgesic, it seems to me to fill a gap in the equipment of the general practitioner.

For local uses it is supplied in glass tubes containing about an ounce of the fluid, sufficient for ten or twelve minor operations, such as teeth extractions, or in large metal flasks enclosing about six ounces. One end of the tube or flask is narrowed to a point and fitted with a screw-cap, which on removal allows the exit of the ethyl through a capillary opening. The tubes may be carried in the bag or pocket without danger of breakage, but must not be exposed to heat for fear of an explosion, such as occurred lately in a medical man's outside pocket on a hot day.

Application—As an Anæsthetic.—The part should be washed first with ether and alcohol to cleanse the skin and remove all fat, and should then be thoroughly dried. The tube is grasped in the hand, and the cap being unscrewed, the spray of ethyl is directed into the part to be frozen, the tube being held six to ten inches from the skin, which becomes first pink, then deep red, and finally suddenly white and insensitive, as it freezes in half to one minute. In warm weather and with thin skins, the freezing is quicker than under the opposite conditions. The anæsthesia lasts about two minutes. With tender skins and mucous membrane it is well, to prevent any redness remaining, to smear the part with vaseline before applying the spray. I am not sure as to the best distance to hold the tube away from the skin. One authority says a quarter of an inch, others eighteen inches. I think it should strike the skin just where the jet breaks into spray, and nearer in hot than in cold weather.

As an Analgesic.—Unscrew cap, and holding tube in your hand, spray over the surface till the pain disappears, using it again and again if necessary., It may not be necessary to freeze the part to relieve the pain.

Use—As an Anæsthetic.—There are many minor operations for which we can use it. Trimming wounds, avulsion of ingrowing toenails, tapping chest or abdominal wall, opening abscesses, carbuncles or boils, suppurating breasts, &c. ; removal of foreign bodies, as splinters, needles, fishhooks ; removal of subcutaneous tumours; amputation of fingers; before scraping or burning warts, condylomata or lupus tubercles. In applying the actual cautery, allow the liquid to completely evaporate before applying the iron, this is hastened by blowing on the part. Touching anal fissures or chancres, cutting piles.

In all these cases, besides being anæsthetic, the ethel is hæmostatic, a great advantage, and it also fixes and hardens the part to be cut. This is sometimes of use. For instance, I mended an old tear in the lobe of an ear the other day, and having the lobe frozen, I was able to cut and fit the parts very accurately, and with a minimum loss of tissue.

In dentistry, it is frequently and increasingly used. Before applying, the gum should be thoroughly dried and smeared with vaseline, and the neighbouring parts protected and packed with wool. The patient is instructed to breathe through the nose. During thawing, care must be observed in the use of hot water; if used too hot, or too soon, sloughing might result. For extraction, many dentists are very fond of its use, freezing the gum on each side of the tooth; they say that it checks bleeding, and that patients like it, and say they feel nothing. It is said not to be necessary to spray into the mouth at all, to prevent pain in extractions. If the jet be thrown on to the jaw outside, near the entrance of the dental nerve in front of the ear for the upper, behind the ramus of the inferior maxilla for the lower jaw, anæsthesia of the whole jaw on one side will be caused, and teeth extracted painlessly; this is useful in the case of molars, which are not so accessible to the spray as the front teeth.

As an analgesic.—Ethel chloride will relieve most pain. It gives great relief to all neuralgic pains such as migraine, the headache of influenza, or toothache. It will relieve the pain of iritis or conjunctivitis sprayed round the orbit. Abdominal pain and colic, gastralgia, ovarian pain, pain of peritonitis are said to be eased by it. In epididymitis, it relieves and reduces inflammation, and it has been used in meningitis and sunstroke. Pruritis, pleurodynia, shingles, may all be relieved by its use. In dyspnœa (spasmodic), asthma, hiccough, it should be sprayed round the base of the chest. It will effectually stop epistaxis if applied to the base of the nose, or sprayed directly into the nostrils, and might be advantageously used in persistent bleeding after tooth extraction.

Comparing cocaine and ethyl chloride, we find the former—(1) May give rise to toxic effects, even when most carefully used, so that many dentists and doctors have grown afraid to use it. (2) May give rise to the cocaine habit. It often necessitates, and habituates patients to the use of the hypodermic syringe. The needle may of itself cause severe pain.

The chloride of ethyl has no toxic effects, and even in dentistry any small quantity that may be inhaled is very quickly eliminated. It gives rise to no craving, and requires no hypodermic syringe, no needle, no apparatus of any kind. Its application and thawing are not unpleasant, nor objected to by patients. It prevents bleeding, and hardens and immobilises the parts frozen, and so is of use when loose tissues have to be cut and accurate fitting is necessary; the cocaine has the disadvantage, as Dr. Moore told us, of causing a good deal of swelling in such tissues. I am anxious to try the use of ethyl for a circumcision. Should the spray get into the eye it will cause a little smarting, but do no damage.—*Australian Medical Journal*, *December* 20, 1895.

58.—THE SURGICAL ASPECTS OF THE NEW PHOTOGRAPHY.

By Albert Carless, M.S. Lond., F.R.C.S., Senior Assistant-Surgeon to King's College Hospital.

[In the excerpt taken from Mr. Carless' paper a description of the apparatus used is given. Three of the illustrations have had to be omitted. Perhaps the author's estimate of the new photography may appear rather low, yet in the time which has elapsed since his paper was written, no very great advance has been recorded. For a further paper on the same subject see article under Medicine, p. 187]

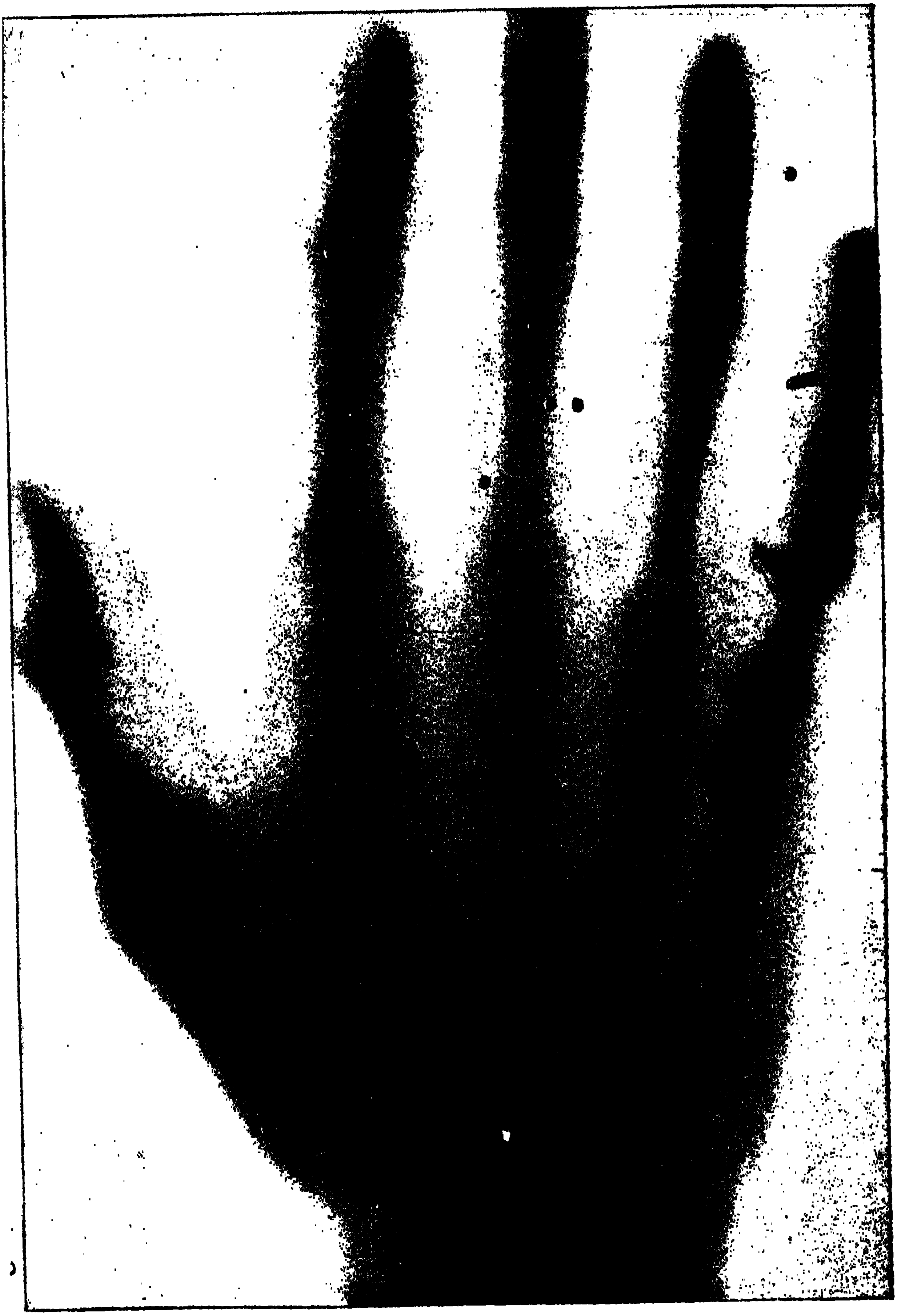
Professor Röntgen holds the Chair of Experimental Physics in that section of the University of Würzburg which is devoted to mathematics and the natural sciences, and has as colleagues in the Medical Faculty such men as the anatomist Kölliker, the physiologist Fick, and the pathologist Rindfleisch; whilst Professor Sachs holds the Chair of Botany in the Faculty of Philosophy. Surrounded by such earnest workers as these, it is no wonder that Röntgen has been enabled to make a discovery that has set all mouths talking, and the ultimate issue of which cannot at present be even guessed. The new photographs can only be compared with the old daguerreotype pictures; and as the whole realm of our present-day photography, so brilliant and so perfect, has arisen from this poor commencement, so may it be hoped that further research will lead to advances equally brilliant along this new line.

It has been long known that the chief chemical effects of light are the outcome of the ultra-violet rays of the spectrum which are invisible to the naked eye; but from the fact that the so-called X rays of Röntgen do not follow the ordinary course of all the constituents of the spectrum as to refraction and reflection, it seems very doubtful whether they are to be looked on as of the nature of light at all. In this article merely the practical utility of the process in surgery is to be discussed as far as such is at present possible, together with a short notice of the way in which the negatives are produced, and a summary of the chief results hitherto gained by its means.

The two desiderata for the successful issue of this work are a well-exhausted tube and a suitable electric current. A Crooke's tube consists of a glass bulb of variable shape and size, into the sides of which are sealed two electrodes, which are sometimes formed of platinum, sometimes of platinum and iridium, or again of aluminium. The points of insertion must be sufficiently far apart to prevent the current from bridging the intervening space outside the bulb, whilst the inner ends are usually not separated by any great distance. The tube used for the appended photographs was specially made by Mr. Jackson, a proceeding involving the expenditure of considerable time, since it perhaps takes an hour to blow the glass into a suitable shape, and several more to insert the electrodes and exhaust it thoroughly, since the desired results can only be obtained if the vacuum within the tube is of a high degree. To attain this object the ordinary air-pump is of little service, and Geissler's or Spreugel's air-pump has to be employed. At first, when the electric current passes through the tube full of air, the usual violet-purple glow is seen, chiefly surrounding the electrodes, which run a considerable risk of being fused if a powerful current is being employed. As the air is gradually exhausted this violet glow diffuses itself through the space between the electrodes, and as the vacuum becomes more and more complete a greenish fluorescent appearance begins to manifest itself, and the exhaustion must be continued until this is equally diffused throughout the tube, no sign of the violet woolly glow being seen. Finally, when the tube is ready for use, the whole surface usually becomes brilliantly fluorescent on the passage of the electric current, the fluorescence being apparently associated with the glass and of a most beautiful green colour. When larger tubes are employed and the degree of exhaustion is high this appearance is often absent, except directly opposite the electrode. Even when the tube is apparently perfect the continuous passage of the current leads after a time either to some leakage of air, probably at the junction of one of the electrodes, or to the development of gases from the terminal, and then there is a reappearance of the violet glow and the value of the tube is destroyed, at any rate for a time. Sometimes, however, this is merely a temporary failure, which vanishes when the tube is allowed to cool, the gases probably being absorbed on to the glass. It must be noted, however, that the chemical effects are in no way dependent on the fluorescence. Then again the electric current must be one of high intensity and great frequency. That employed in our experiments was derived from a battery of six Groves' cells, giving a current of about 10 volts, which by passage through a suitable Rühmkorff's coil was multiplied so as to reach a sufficiently high voltage and giving a three or four inch spark. If the current had been stronger, less length of exposure would probably have been necessary. When it is desired to "take" any object, a quick plate of maximum sensitiveness is put in an ordinary dark slide without metal fixtures, and over it the object. The tube is then placed just above at a suitable distance, according to the nature of the body, and the current turned on. There is no need to undertake these proceedings in a dark room, as apparently the presence of ordinary daylight does not cause the slightest interference. The length of the exposure varies considerably with the nature of the substance and the strength of the current; but for ordinary objects which are not especially opaque (that is, speaking relatively) an exposure of two and a half, three, or four minutes is quite sufficient. There is but little difficulty in obtaining a photograph of a finger on an exposure of but a few minutes, but when the thicker portions of a limb are dealt with this must be increased considerably.

The first illustration [see opposite] represents a hand in which a bullet is embedded; the owner of this interesting curiosity is a medical man, an old fellow-student of my own, who met with a revolver accident twelve or fifteen years ago, and managed to lodge the missile deeply in the palm, where it has since remained. He has suffered but little inconvenience from its presence, except in cold weather or after indulging in such exercise as rowing, when a little pain, or rather discomfort scarcely amounting to pain, is experienced. By careful palpation the position of the bullet can be ascertained between the third and fourth metacarpal bones, and hence the photograph, though interesting, is of but little practical value.

The second picture represents the lower portion of the bones of the forearm. The limb was taken from the cadaver, and had been preserved for some time in spirit; it was tolerably muscular, and in order to obviate any possible increase in the opacity of the limb from the sodden state of the cuticle, which had been acted on by the spirit, this was first removed. The radius and ulna were both artificially fractured by direct violence in order to see whether such an accident could be photographed. The site of the fracture in the ulna is to be detected, but that in the radius cannot be seen owing to its oblique direction. An exceedingly interesting point is the appearance of some of the blood-vessels, probably the superficial



Photograph of hand in which a bullet is embedded.

veins, which have come out quite distinctly, showing that they, at any rate, cannot be looked on as perfectly transparent to the X rays. No injection of the limb had been attempted.

The third illustration represents two fingers of a hand, of which the second phalanx of that on the right side had been broken early in life, and from which portions of dead bone have from time to time worked out. It is clearly seen that the phalanx is distorted and anything but straight.

The fourth picture is of somewhat greater interest, in that we have been able thereby to accurately establish a diagnosis which had previously been a little doubtful. It represents a thumb and metacarpal bone. Many years ago, the individual had been unfortunate enough, whilst playing football, to dislocate both the terminal phalanges, and since then he has had a swelling on the ulnar side of the metacarpal bone, the nature of which was not quite clear to some who had examined it. One authority had stated very definitely that it was merely a tense bursa, or ganglion, and several attempts had been made to disperse it by pressure. The photograph results from an exposure of forty minutes, and although the parts were somewhat thick, and consequently the definition not very good, yet it is perfectly obvious that the enlargement is due to an osseous outgrowth from the upper end of the metacarpal bone, and not to any collection of fluid.

Turning now to a consideration of the already extensive literature of the subject, one is at once met with a marked difficulty in gauging the value of the work done, owing to the very imperfect records that are given as to the length of the exposure in the various instances, and as to whether the parts photographed came from the living subject or the cadaver. After our own experiences, one cannot but read many of the highly eulogistic reports with a considerable amount of scepticism.

The important question as to the relative transparency of the tissues has attracted a goodly number of observers, including Bergonié (*Journ. de Méd. de Bourdeaux*, February 9) and Waymouth Reid, of Dundee (*B. M. J.*, February 15). The former employed layers of the different tissues of equal thickness, and ascertained that the relative transparency of all the soft parts was practically identical, and that cartilage was the most transparent of all the tissues. The latter observer confirms this statement, finding also that fat comes next to cartilage in transparency, that the cortex of the kidney is more permeable than the pyramids, that in the brain the white matter allowed the rays to pass more readily than the grey, and also established the fact that cancerous tissue is no less transparent than the normal tissues in which it is lying.

Bergonié points out that foreign bodies, and more especially those made of metal (with the exception of aluminium), can be readily detected, but even here only under certain favourable conditions. The first of these is that the actual thickness of tissue interposed should not be too great. It is probably impossible to detect a ball in the liver or lung, not only from the fact that portions of the bony skeleton are in the way, but also that the thickness of tissue is too great. Thus he found that the definition of a needle was lost if it was embedded in the hand at a greater depth than a centimetre-and-a-half. Again, although one may obtain a clear image of the intruder, yet it will be very difficult to estimate the depth at which it is lying. Neusser (*Münch. med. Woch.*, February 4) has found that gall-stones can be distinguished through a considerable thickness of liver substance out of the body, and also that vesical calculi are opaque, and expresses the hope that we may derive assistance by this means in diagnosing obscure hepatic complaints, a hope that is not very likely to be fulfilled.

It has also been found that in injected parts of the dead body the blood-vessels are by this means reproduced with the utmost clearness ; and Messrs. Haschek and Lindenthal, in the laboratory of Professor Exner, in Vienna, have obtained some negatives (*Wiener klin. Wochens*, January 23) ; that reproduced in the paper does not, however, suggest that much assistance will be gained thereby in the teaching of practical anatomy. They also show a hand, embedded in one of the phalanges of which is a bullet, which had been in that situation for some years ; it appears that the missile is entirely encapsuled.

Lannelongue (*Union Médicale*, February 1) presented three photographs to the Paris Academy of Science on January 27, two of which were of considerable interest. The first of these represented the photograph of an anatomical preparation—viz., a femur attacked by acute osteomyelitis (or, as we used to call it, acute infective periostitis). Certain white spots appeared in the midst of the shadow thrown by the bone, and thus the fact once more was demonstrated in a new way that this disease starts centrally in the medulla, and not under the periosteum. A second picture was that of a finger the subject of tubercular dactylitis ; the first phalanx was enlarged, and the periosteum evidently infiltrated, whilst the second was more transparent than normal, thus indicating that it was probably the site of a commencing osteitis.

Von Mosetig Moorhof (*Presse Médicale*, Vienna letter, February 5) has photographed two cases, the results of which have been seen in the *British Medical Journal* of February 8. One was that of a hand in which was embedded a bullet, the site of which could not be detected by touch. It was by this means shown to be embedded in the radial side of the fifth metacarpal bone, and was readily removed at a later date. The second photograph was one showing the enlarged great toe of a girl, in which it was not certain as to the nature of the enlargement. The photo showed very clearly that it was due to the presence of an accessory terminal phalanx, and also indicated the line of treatment to be adopted.

Jastrowitz (*Deut. med. Wochs.*, January 30) relates a case in which the X rays have enabled the situation of a glass splinter in the hand to be accurately located, and appends an illustration of the same, which, though by no means clear, suffices for the purpose. The length of the exposure was thirty minutes. The foreign body has since been successfully removed. Speiss, of Vienna, has also succeeded in finding in this manner a splinter of glass in the hand.

Walther Petersen, of Heidelberg (*Münch. med. Wochens.*, February 11), gives five illustrations of photographs taken by this means, one of the subjects consisting of the forearm of a corpse which had been preserved in formalin and in which a fracture of the radius and ulna had been produced. The fracture is seen tolerably clearly, but one doubts whether in the original it was nearly as evident.

M. Bar, in the *Presse Médicale* of February 12, has published a series of nine illustrations, which, however, are of more interest than value, since they are chiefly taken from infants or portions of the infant cadaver.

Other cases have been mentioned in the papers both lay and scientific, but we have found no accurate records of them. Thus it is stated that Prof. Kocher has found and removed a needle in a child's hand; that a similar case has occurred at St. Thomas's Hospital, and again at Leeds; but sufficient has been said here to suggest the possibilities lying latent in this new procedure.

In conclusion we ask, What value from a surgical standpoint are we to attach to it? As already indicated we must remember that it is in its earliest infancy, and that we can only speak of it in the most guarded fashion. If the intensity of the rays can be increased, or if means are found to effect their reflection or refraction, then possibly we may have to reconsider our verdict; but as things are at present, there is but little doubt that the part played by it will not be one of great importance. Obscure injuries and conditions of the fingers and toes will lend themselves readily to its application; and it will, without any doubt, be a useful agent in solving certain questions of diagnosis in these regions, although even here the majority of such affections will be diagnosed just as easily by the educated touch of the skilled surgeon. Injuries or diseases of the wrist will probably be little helped by the process, except in young children, where the bones are still partly cartilaginous: whilst the majority of such conditions as could be portrayed in the upper and more bulky parts of the adult arm or leg can usually be readily diagnosed without any such help, even if it were forthcoming. There is some ground for hoping that assistance may be derived from the transparency of tubercular tissue in the diagnoses and localisation of isolated foci in the bones of children. Cancers and other tumours are all equally transparent to the X rays, unless bony tissue is present, and possibly the diagnosis of a malignant tumour of bone might receive confirmatory evidence by this means. The transparency of cartilage also leads us to hope and expect that assistance will be obtained in the diagnosis of separated epiphyses and fractures implicating joints in children. As to conditions within the abdomen and chest, the thickness of the parts involved absolutely precludes the hope of any satisfactory results being at present obtained.

Our attitude, then, towards this new discovery must be one of expectant interest and, where possible, of active scrutiny. That it can be of real value in a certain limited number of cases there can be no doubt; but, unless very considerable improvements are made in the technique, it will be but little resorted to in practical work.—*The Practitioner*, *March*, 1896.

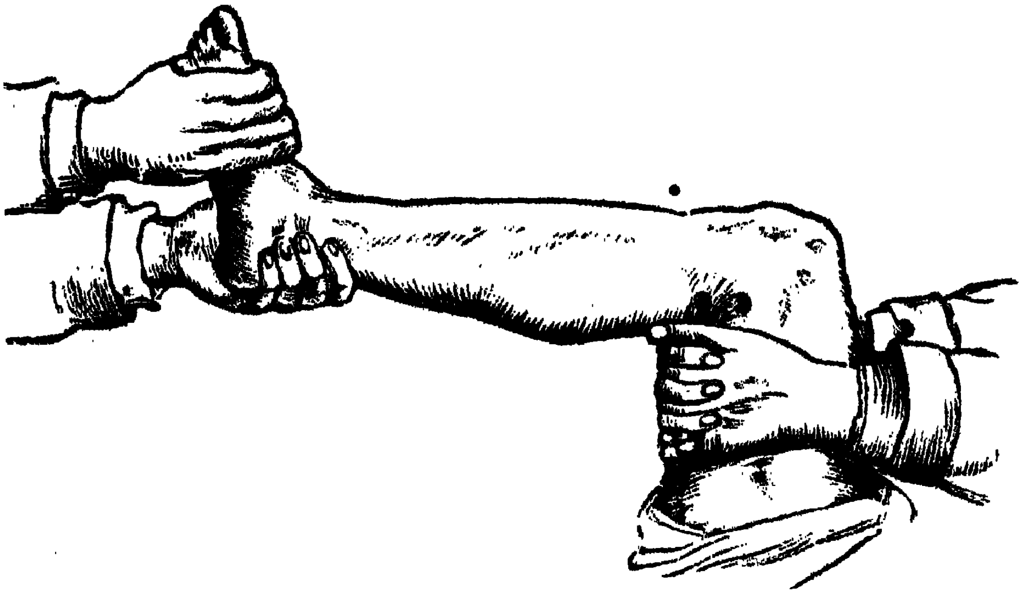
59.—FRACTURES OF THE LOWER LIMB.

By Christopher Heath, F.R.C.S., Eng.,
President of the Royal College of Surgeons of England; Holme Professor of Clinical Surgery in University College.

[The cases and other matter have had to be omitted.]

We have here two cases—one a case of weak union, the other a case of absolute non-union—both treated by fixation, and both allowed to be up and about on crutches. So far as the splint will allow there will thus be pressure made on the two ends of the bone at the seat of fracture, and in that way I hope we shall have extra callus thrown out and avoid an operation for ununited fracture. I would remind you how important it is, in fracture of the leg particularly, that the fracture should be set thoroughly and accurately. Of course, I know well that there are many difficulties. Immediately after the accident all the muscles of the limb are more or less in a state of spasm, and tend, therefore, to pull the bones into abnormal positions, but that state of spasm passes off in the course of a few hours, and you can generally manage with care and patience to put the limb into a proper position, and unless that is done, and done accurately, the surgeon has not treated the case properly.

The first thing to see to in such a case is relaxation of the muscles while extension is applied to the limb, and a good way to attain this object is shown as under. The thigh is flexed, and an assistant should pull on the thigh in the manner shown, the lower part of the thigh being firmly clasped and held perpendicularly to the recumbent body; the leg is then flexed to a right angle with the thigh so as to relax the muscles of the calf, and the surgeon, grasping the foot, can manipulate for fracture or dislocation. It is in this form of fracture of both bones of the leg that I would recommend you occasionally to flex the limb at the seat of fracture if you cannot get the bones into good position. This may seem a dangerous proceeding, but it is not so hazardous as one might think, though you must nevertheless be very careful to avoid making a simple fracture compound. In the average case, however, you can set the fracture in the way I have described without much trouble, and in compound fractures you can manage it with greater ease, and, moreover, you can insert your finger and feel if the two ends are in accurate apposition. In compound fractures also you will be able to thoroughly investigate the presence of a spiculum of bone preventing accurate apposition, and no one would hesitate to push the bone out of the wound and saw off such a projecting spiculum. In cases of compound fracture, where you find, the moment after you have set the limb, that the bones become displaced again, it would be quite within the bounds of good surgery to divide the tendo Achillis subcutaneously, or to drill the two fragments and put in pegs or



screws to hold the bones together; and I may say that this method of pegging or screwing has been recommended by an enterprising surgeon, not only for compound but also for simple fractures. But I cannot conceive how anyone can believe that it is justifiable to convert a simple into a compound fracture, and of this I am quite certain: that the majority of surgeons for the present will remain content with the usual methods of treatment.

The tendency of the lower fragment to drop back with the foot is best met by the use of a back splint, and I know of none better than what is commonly called Arnold's splint. If the foot is carefully bandaged to the upright foot-piece, and then extension made until the fracture is properly set, the upper fragment can be fixed to the splint by a broad band of adhesive plaster, and a bandage carried over it and above the knee. The side splints, which are subsequently applied with webbing straps, help to keep the bones in position, and the inner border of the great toe should be in a line with the inner border of the patella. I have called your particular attention to a recent fracture of the tibia, where I was not quite satisfied with the subcutaneous line of the bone; I therefore asked my house surgeon to raise the foot a little, and immediately this was done the fragments dropped into position, and the improvement was obvious. The importance of thus raising the foot in oblique fractures of the tibia is not sufficiently recognised; it is a valuable point to remember, and I learnt it myself from Mr. Jonathan Hutchinson.

Returning to the case of the man with boths thighs fractured, let us briefly consider how fractures of the thigh should be treated. The particular method used depends to a great extent on the views of the individual surgeon, and I am not prepared to say that there is any very special advantage in one treatment over another. Provided you will only attend carefully to certain rules, you may perfectly well expect equally good results from different methods. In my own wards, as a general rule, and in accordance with local tradition, Liston's long splint with a perineal band is the method usually adopted, and its results are quite satisfactory. Of course, there is no hard-and-fast rule, and here is a case in point where the method of weight-extension was more convenient. It would be a little awkward to put up a fracture of both thighs with Liston's splints, unless you used an apparatus such as Bryant's, consisting of two long splints and a cross-bar, the extension being made by an india-rubber accumulator. I am quite content, however, to treat a case of this kind with weight-extension, using retentive splints around the fracture; but then there are two or three points to which you must give particular attention. The plaster by which the extension is maintained must be taken above the knee. This is not so well known as it should be; for you occasionally find that a house surgeon has applied the plaster up the leg, but has stopped below the knee, the result being that the knee-joint is pulled upon and possibly damaged, whereas, if the plaster be continued above the knee, you are applying weight-extension to the fractured bone, the necessary counter-extension being obtained by the weight of the patient's body. Sometimes it is found necessary to raise the foot of the bed, but usually the weight of the patient's body is sufficient, and it is seldom that you find yourself reduced to the necessity of using a perineal band attached to the head of the bed, unless in cases of fracture in children.

Let me here remind you of another method, which I have not lately been able to illustrate practically in my wards—a method of treatment of children with fracture of the thigh invented by Mr. Bryant. The child is suspended by its feet from a cradle, with splints on the broken limb, but both limbs are suspended for convenience, and extension is obtained by the weight of the child's body falling into the bed. The convenience of the position is very great, for the buttocks are well exposed, and the child can be easily kept clean.

Let us now consider these cases from the nurse's point of view. The management of the bed-pan is an important matter. I have already directed your attention to a very convenient plan, that of using a divided mattress. The division is made opposite the buttocks of the patient, and the interval is occupied by a cushion, which can be removed for the introduction of the bed-pan. Of course you can have regular invalid beds for these cases of fracture, such as are advertised in the journals; but these are all expensive, and not adapted for hospital work, and I consider the plan of dividing the mattress an easier and better method.

In the treatment of fractures there is another point to be well borne in mind. On visiting a patient the evening after a fracture it is a good rule always to carry a catheter, as it may save going back for it; and you should never omit to inquire whether the bladder has been emptied.

I now come to the consideration of the cleanliness of the patient and the state of his back. A good deal depends on the nurse. With a good nurse who understands her work, the patient will be kept dry; the urine will be properly looked after, and even if the patient is an imbecile, passing everything under him, still a good nurse will keep everything right—but I hope you will not have many patients of that description. The best plan is to turn the patient on to his side and let the nurse wash the buttocks and back, and then dust them well over with some powder—oxide of zinc, for example, or the more common violet powder—preventing in this way any irritation. Always remember that if you once let the back get sore you will probably not get it well again, and that is a very serious matter for the patient. Still, with every care, the skin may become red, and it is well in that case to protect it. "Papier Fayard" is what I often advise; it is an unirritating paper plaster and very cheap, or you may prefer to use something thicker—as, for instance, plaster spread on kid or leather. The skin can also be hardened by rubbing it with a mixture of brandy and oil. If, however, your patient complains of his back, and on examination you find a black slough forming in the skin with unhealthy discharge beneath, you know then you are in for a bed-sore; and sometimes these sores rapidly increase in size and result in the death of the patient. Now, when a bed-sore has reached that state nothing can be done till the slough is removed, and the best way to do that is to apply an old-fashioned linseed poultice, well sprinkled with iodoform, and to blow iodoform into the sore itself. After the slough has separated stop the poulticing and stimulate the ulcer with red wash or some slightly stimulating ointment, and in that way you may hope to heal the bed-sore, though it will seldom become quite healed until the patient is able to get out of bed. Remember also that elderly people are very apt to have some congestion of the lungs. The proper management of the patient's bowels has also to be considered.—*The Lancet, January*, 1896.

60.—A FEW IMPORTANT POINTS IN THE EARLY DIAGNOSIS OF CHRONIC DISEASE OF THE JOINTS.

By Dr. Le Roy W. Hubbard.

Tubercular inflammation of the various joints is so common, often so insidious in its onset, and the result, if left to itself, generally so disastrous, that the importance of an early diagnosis is apparent. Where the disease is recognised very early, and appropriate treatment adopted, the results are extremely satisfactory. Many mistakes are made, probably more through carelessness than ignorance. Cases of Pott's disease have been treated for lumbago or dyspepsia, and hip disease diagnosed as rheumatism or growing pains.

The author insists on the importance of a thorough and most careful examination. A child should be stripped and examined from head to foot. If the symptoms are not clearly defined on the first visit the patient should be kept under observation.

Dr. Hubbard considers reflex muscular spasm as the one most important sign in chronic joint disease. By it is meant a tonic spasm or contraction of all or some of the muscles in relation to a diseased joint. It is present only in those muscles which act upon the diseased articulation; it is almost without exception the expression of bone inflammation; it is the first sign to appear, and it persists till healing has taken place. In some cases where the disease is extensive, all the muscles are involved, and the joint is held so rigidly that anchylosis might be suspected. The slightest attempt at motion is met with resistance, and the muscles can be felt to quiver under the fingers, while the patient suffers no pain. In early cases quite a range of motion is allowed with perfect freedom, but a point is reached when motion is checked in one direction or another before the full normal limit. The resistance is reflex and disappears under an anæsthetic.

Dr. Hubbard does not place much value on hereditary history or the history of traumatism in the early diagnosis of chronic joint disease. In fact the presence or absence of any one symptom is not sufficient to determine the true nature of the trouble. It is only by a careful grouping of symptoms and objective signs that a positive conclusion can be reached, and in children the objective signs are more important than either the history or the subjective symptoms. In tubercular disease of the spine the history and symptoms will vary, depending on the region involved. In the region from the first cervical to the third dorsal vertebra, which has the greatest range of motion, reflex spasm plays an important part in determining the diagnosis. Usually the first thing that is noticed is that the child carries its head stiffly, or holds it on one side. Sometimes the position of the head resembles that in torticollis, and Pott's disease in this region has been treated as wry-neck and *vice versâ*. A point of differential diagnosis is the turning of the head. In spinal disease the chin is turned towards the contracted muscle; in wry-neck, away from it. The nocturnal cry is common in this as in all forms of joint disease.

In the second region, extending from the fourth to the tenth dorsal vertebra, an early diagnosis is often difficult, owing to the very slight mobility of the spine at this part. Usually there will be a history of the child holding its back stiffly, with shoulders elevated, and of disinclination for play. In young children a grunting respiration is frequently observed. Pain may be in the back, but is more often located in the epigastrium, which may lead to errors in diagnosis. Even when there is no deformity there is a change in the respiratory movements. The ribs are held somewhat fixed, and the abdominal respiration is more prominent.

When the third region is involved, we find signs referable to the muscles supporting the part. The child walks stiffly, takes short steps, and avoids uneven places. When the child wishes to pick an object from the floor it does so in a characteristic way. The back is held rigidly erect, and motion takes place at the knees and hips.

In hip disease the first symptom in most cases is a limp, and the author emphasises the fact that a limp in a child is always a suspicious circumstance. Next in frequency comes pain, either in the region of the hip or at the knee. Limitation of the range of motion of the thigh and reflex spasm may be observed on examination of the case. Atrophy of the thigh is present very early in hip disease, and is a valuable sign. It seems to be due to trophic changes, and not disuse of muscles. It can be determined only by careful measurements. Shortening is not present as a rule unless destruction of bone has occurred, but there may be an apparent shortening from the position of the limb. Dr. Hubbard strongly deprecates all rough handling of the joint, it may cause injury. In the knee chronic disease may begin, either as a synovitis or as an osteitis, and the symptoms will vary according as the synovial or bony structure is the site of the initial lesion. If it begins in the capsule of the joint, swelling is the first change noted, coming on without pain. This increases till the joint has a smooth rounded shining appearance—the tumour albus of the books. The symptoms are often slight—no pain, and only a slight limp after walking, accompanied by fatigue. If, on the other hand, the disease commences in one of the bones near the articulation, we have the signs of osteitic disease, no swelling, limp (worse after rest), pain, spasm, and limitation of motion. Flexion usually occurs quite early, due to contraction of the hamstring muscles. Chronic synovitis usually extends, involving the bones, and the exact time is indicated by the change in symptoms and signs.

Disease at the ankle may begin either as a synovitis or an osteitis, and the same difference in symptoms will be noticed. Most frequently a slight puffiness below the external malleolus is the first thing noticed, though a limp may be the first sign. Reflex spasm appears early, and the foot assumes the position of extension and inversion.—*American Medico-Surgical Bull.*, *January* 11, 1896. (Abstract by Mr. Francis Coutts, in the *Medical Chronicle*, February, 1896.)

61.—PSEUDO-COXALGIA.

By Professor **Duplay**, M.D. Paris University, Hotel Dieu.

I propose to discuss with you a group of maladies which are not habitually considered in their *ensemble* by clinicians. I refer to those affections, so diverse in their nature, which simulate coxalgia, although in reality there does not exist the slightest lesion of coxo-tuberculosis.

We may divide pseudo-coxalgias into two great classes, the first where the articulation is healthy, but where there exists, as in the patient before us, a lesion in the neighbourhood, and the second, still more interesting, in which not only is the joint intact, but no concomitant lesion is apparent. The lesions of the first group depend most frequently on inflammatory affection of the skeleton, and more especially of the pelvis or the great trochanter of the femur. I remember having treated successfully a young man for osteitis of the great trochanter, who had been previously treated for coxalgia by an eminent surgeon. In another case, that of a boy from Melbourne, the doctors of his country diagnosed coxo-tuberculosis. Examined by my former pupil, Dr. Crivelli, the case was pronounced to be one of osteitis of the epiphysis of the superior extremity of the femur. I was called in and confirmed the opinion of Dr. Crivelli ; the child got well without the slightest claudication. One or two years afterwards the same symptoms returned during a voyage through Europe, and his parents this time consulted the first surgeons in Lille, who unanimously pronounced the case to be tuberculous disease of the joint, and recommended the treatment usual in such cases. The patient, however, recovered quickly, and when I last saw him I was able to satisfy myself in respect of the integrity of the articulation.

At other times, affections of the serous bursæ of the neighbourhood of the articulation may exist; I met thus with two cases of suppuration of the serous bursæ of the gluteus maximus simulating in every respect the clinical aspect of coxalgia.

How are we to arrive at a correct diagnosis of such affections ? Most frequently you will be struck with the fact that there is something wanting to the usual symptoms of coxalgia ; it is thus in our patient—you will find neither abduction nor flexion of the thigh on the pelvis, nor the large lumbar excavation. Or you may remark other signs in contradiction with the ordinary symptoms of coxalgia, and it is in the attentive study of all these details that you will arrive at the truth of the case.

Where doubt still exists you must examine your patient under chloroform, by which you will be able, if the articulation is healthy, to establish motions in every sense without provoking the slightest grating.

The second group, as I have already pointed out, consists of cases in which the symptoms of coxalgia are present, but without any lesion of the articulation or of the parts. It was Brodie who, in 1837, drew special attention to this form, which he described under the head of spasmodic coxalgia or articular neuralgia. These terms were replaced later on by Verneuil and Charcot, by that of hysterical coxalgia. The affection is met with more frequently in women, and may supervene at any age, but generally at or about puberty. The malady usually declares itself suddenly from some insignificant cause in a person presenting generally signs of hysteria. In certain cases imitation plays a principal *rôle*, as in the case mentioned by Paget, where a young girl suffered from hysterical coxalgia whose brother was being treated for a true tuberculous coxalgia. The principal symptoms of hysterical coxalgia are : pain, muscular contractions, and abnormal attitude of the limb. The pain resembles frequently that of true coxalgia, being felt in the knee as well as in the hip, but the seat varies greatly, the patient complaining now in front, now behind. Frequently also, there exists extreme sensitiveness of the skin, the slightest touch provoking a typical nervous crisis. Further, the pain is superficial, whereas in true coxalgia it is deep-seated. The muscular contractions in pseudo-coxalgia are resistant, contrarily to what obtains in the true form, where they can be surmounted with a little patience in provoking certain movements of the joints. Locomotion in both affections presents characteristic signs. In coxo-tuberculosis, the patient suffers agony from the slightest attempt at walking, and will refuse to leave the bed, while the hysterical patient will limp about readily enough and does not complain of pain. This is an important sign, and should be borne in mind.

Except in rare cases, and remembering the symptoms I have just mentioned, you will be able to diagnose hysterical coxalgia without difficulty. You will take into account the *début*, generally sudden ; the attitude, flexion, adduction, and rotation inwards ; the inconstancy of the seat of pain, and its superficial character. Besides, muscular atrophy, which is one of the most important signs of tuberculous coxalgia, is usually absent, and there is no fever.

The prognosis of hysterical coxalgia is in most cases benign. The affection is always recovered from, often spontaneously, but you must not forget that it is liable to return on the slightest cause.

In what does the treatment consist? Everything has been tried from most rational to most empirical therapeutics, and frequently the patient recovers after all treatment has been abandoned. Charcot insisted on the necessity of renouncing all violent measures from a surgical point of view, and of treating the affection by bromides and general nerve sedatives, and especially by those means which appeal strongly to the imagination, such as magnetism, hypnotism, suggestion.

I quite agree with this advice as long as the limb has not assumed an abnormal position. If the contrary be the case, however, it will be necessary to correct the attitude under chloroform, and maintain the position thus obtained by some suitable apparatus.—*Medical Press and Circular, January* 15, 1896.

62.—TUBERCULOUS BONE DISEASE OF CHILDREN TREATED BY INJECTIONS OF IODOFORM.

[The following is an editorial taken from the *Journal of the American Medical Association*, January 18, 1896 :]

Dr. Wieland reports to the *Deutsche Zeitschrift für Chirurgie* that he has come to regard the conservative treatment with a 10 per cent. iodoform injection for tuberculosis of the soft parts, bones, and joints, much more satisfactory in children than in adults; and analyses in support of his view the report of the Children's Hospital at Basel for the last five or six years. He finds that tuberculous abscesses treated in this way healed very often. The method employed was to empty the abscess with an aspirator, then irrigate with a 4 per cent. boric acid solution, and after the cavity had been well washed out to inject 20 to 50 c.c. of a 10 per cent. iodoform emulsion, either in glycerine or oil or in water, adding a small quantity of gum arabic to hold the iodoform in suspension. As often as the abscess refilled the operation was repeated. It is essential to keep the part treated at rest, and to firmly support it with a flannel bandage.

Of twenty-one cases treated in this manner sixteen, or 80 per cent., were fully cured, four were removed from the hospital by parents before treatment was completed, and one case was a positive failure. In eleven of the sixteen successful cases one injection sufficed; in one, two were necessary; and in four the patient required three injections. Fistulæ at the point of injection occurred four times, and once there was a septic infection of the large abscess.

Twelve cases of joint tuberculosis were treated in this way. Nine, or 75 per cent., were cured and two cases were much improved. Joint cases required from six to thirteen injections given during a period of two to six months.

Four cases had acute nephritis from the iodoform, which, however, speedily disappeared. In one case there was severe iodoform intoxication, but in this case 20 per cent. emulsion was employed.

Senn, after an exhaustive review of the subject several years previously came to a similar conclusion. Senn's summary should be kept in view to fully appreciate the force of this remark.

Conclusions.—(1) Parenchymatous and intra-articular injections of safe antibacillary substances are indicated in all subcutaneous tubercular lesions of bones and joints accessible to this treatment. (2) Of all substances so far employed in this method of treatment iodoform has yielded the best results. (3) The curative effect of iodoform in the treatment of local tuberculosis is due to its antibacillary power and its stimulating action on the healthy tissue adjacent to the tubercular product. (4) A 10 per cent. emulsion in glycerine or pure olive oil is the best form in which this remedy should be administered subcutaneously. (5) The ethereal solution should never be employed, as it is liable to cause necrosis of the tissues overlying the abscess and iodoform intoxication. (6) Tubercular abscesses and joints containing synovial fluid or tubercular pus should always be washed out thoroughly with a 3 to 5 per cent. solution of boric acid before the injection is made. (7) Injections should be made at intervals of one or two weeks, &c., and then follow other aphorisms pertinent to the subject.

It is thus seen that Wieland simply repeats substantially the conclusions of Senn made three years before. The long list of Continental surgeons favouring the iodoform treatment is fairly stated by Gangolphe, although that author himself favours the method of Lannelongue—by chloride of zinc. Mickulicz, Verneuil, Mosetig-Moorhof, Bruns, Krause, Vercherè, Grynfeldt, Dupin, Blaizot, Marty, Ollier, Tripier, Trendelenberg, Vincent, and, stoutest partisan of all, Koenig, are quoted by Gangolphe as attesting the efficacy of the injection of iodoform emulsion in joint tuberculosis. Koelischer and Albert, of Vienna, recommended the acid phosphate of calcium, but, according to Gangolphe, a case of gangrene of the foot, consecutive to this treatment, decided him against the remedy.

In conclusion, it may be stated concerning iodoform emulsion injections, as Gangolphe said of chloride of zinc:—"It is not a panacea, but a powerfully modifying agent." But our own experience fully justifies the hope of curing 30 per cent. of the less advanced cases of tuberculous joint disease by its use.

63.—THE OBJECTS AND LIMITS OF OPERATIONS FOR CANCER.

By W. WATSON CHEYNE, F.R.C.S. Eng., F.R.S.;
Professor of Surgery at King's College; Surgeon to King's College Hospital, &c.

[The following is taken from the first Lettsomian lectures. Other extracts from these very important lectures will be found in other parts of this volume :]

Is cancer curable? Theoretically, being a local and spreading disease, it should be quite curable in cases where it is possible to remove all the off-shoots from the primary nodule, and clinical evidence bears out this view. We know that if any visible portion of disease is left behind recurrence takes place almost at once, and even when the disease left is invisible recurrence takes place in the majority of cases within a year. The cases which recur later are quite few in number, and after three years the chances of recurrence are so slight that most surgeons assume, following Volkmann, that a patient who shows no disease for three years after an operation may be looked on as cured, and they ascribe disease appearing locally at a later period to a fresh development, and not to a residue of the old trouble. Cases, however, are sometimes met with in which late recurrence takes place in parts, such as in glands, where the cells must have remained dormant from the time of the previous operation. Gross has gone very fully into this matter, and states that, of all the recurrences after breast operations, at most 2·3 per cent. take place after three years. On the other hand, König gives a much larger proportion of late recurrences, placing it at 15 per cent. in patients alive and well after three years. The facts, however, vary very much with the situation and kind of disease; in the case of intestinal cancer late recurrences are by no means rare. Nevertheless, for all practical purposes we may adopt the three-year limit, and may feel sure that when a patient, especially with breast or throat cancer, has passed that limit safely the great probability is that he will have no further trouble.

If we take the cases of disease in parts where it is in the first instance superficial, and where there is plenty of room for cutting wide of it, we find a large number which remain free from recurrence for many years. I may instance especially epithelioma affecting the extremities. Statistics of the results of cancer of the extremities are given by various authors, and are very favourable. Thus, to mention only one, R. Volkmann in his papers on this subject in Volkmann's *Klinische Vorträge* through the right vaginal fornix and a small amount of pus evacuated. The patient died forty-eight hours afterward. The autopsy showed the tissues of the uterus and broad ligaments to be generally infiltrated with pus. The Fallopian tubes were normal.

In the second case the woman had been delivered a week before by a midwife. Septic symptoms had speedily set in, and she was in such a low condition when seen by the speaker that he hesitated in advising operative interference. However, as she had a sharply defined mass in the abdomen, just above the middle of Poupart's ligament, which he thought contained pus, an incision was made over it, and the mass, which proved to be an ovarian abscess, was easily removed. There were no adhesions. The tube was normal and there was no visible sign of peritonitis. As in the first case, the tissues between the folds of the broad ligament were diffusely infiltrated with pus. Gauze drains were introduced and the patient was returned to bed. She rallied for a time, but died the next day. An autopsy was refused.

The two cases, said the speaker, were instructive instances of a most virulent form of puerperal sepsis, and showed clearly that it was not always necessary for the Fallopian tubes to be first invaded, but that the infection could and did enter directly through the lymphatics of the cervix and the base of the broad ligament. In the second case it was doubtful whether any treatment, even the most radical, could have saved the patient after the third day, when she showed severe systemic poisoning. In the first case prompt treatment might have prevented any serious result.

Dr. D. E. Walker thought the case presented by Dr. Wells emphasised the importance of temperature after child-birth and miscarriage. He thought physicians who did not make a speciality of obstetrics or gynæcology were apt to disregard slight rises of temperature in such cases.

Dr. P. E. Tiemann said that, while practising in Washington Heights several years ago, he had sometimes observed a post-partum rise of temperature which he was forced to believe was malarial, as he had observed antiseptic precautions during the management of the labour. Not infrequently these patients would have a marked rigour followed by a decided rise in temperature, which, however, readily yielded to treatment by means of a cathartic followed by quinine. Intermittent and remittent fevers were not uncommon in this locality.

Dr. Ralph H. Pomeroy, as an instance of fever in the puerperium not of pelvic origin, referred to a case recently under his observation in which a high temperature following labour had been correctly ascribed to an attack of acute amygdalitis.

more serious, than that which simply aims at getting rid of the main trouble for a time and prolonging the patient's life.

The first question to be considered, then, with regard to a case of cancer is the anatomical one—namely, whether it is anatomically possible to remove all the local disease and the probably infected lymphatic area so thoroughly as to give a fair chance of non-recurrence. If this is anatomically possible the next questions are what are the chances of death as the result of the operation, and what will be the subsequent functional result? In considering these questions we must remember that we are dealing with an otherwise incurable disease, one which is comparatively rapidly fatal, and one which in certain regions—for example, the throat—is often the cause of very extreme suffering before death supervenes, and therefore, even although the risks are very great, unless the result of the operation is certainly fatal the question of operation ought to be presented to the patient if there is a reasonable chance of removing the disease. There is at the present time a tendency with some surgeons to careful selection of cancer cases for operation—that is to say, only to operate on quite simple cases. This is not, I think, a proper point of view. I do not think that patients should be refused operation unless the disease cannot be removed, unless early recurrence is very highly probable, or unless operation means almost certain death or yields a hopeless functional result. Of course, if one has something better to substitute for the radical operation, such as colotomy in extensive rectal cancer, the matter is quite different, but where this is not the case the patient should be told all the circumstances and allowed to take his choice. The following are the lines which I myself go upon. If there is no especial danger in the operation, and the chances of cure are good, as in the case of an ordinary breast cancer, then I should urge the operation, and should not enter into any such details with regard to it or the disease as might frighten the patient. Where the operation is more severe and the probable result is not so good—as, for example, in a breast case with marked adhesion to the muscles—I do not urge the operation, but I tell the patient that I think it is still worth while taking the chance, and I also point out that there is likely to be a good deal of inconvenience after the operation in the way of interference with the movement of the arm; such a patient will usually decide to have the operation done. Where the immediate danger of the operation is very great, but where it still seems anatomically possible to take away the whole disease, the decision must, I think, be left entirely to the patient. The dangers of the operation and the risks of recurrence must be fully pointed out, as well as the subsequent functional results, and the patient must be left to decide. The position which I have assumed in these cases is this, that after emphasising the dangers of the operation and laying the whole matter before the patient in its worst light, I have said that if he wishes to avail himself of the chance I am willing to perform the operation. The primary object of operation in these cases being, therefore, cure, the limits of the radical operation are where there is no reasonable prospect of removing the whole disease, or where, along with a very poor prospect of success, there is a very high mortality from the attempt. In such cases I do not think that operation should be mentioned at all, for even where the patient recovers from it, and has presumably two or three months added to his life, few would, I think, thank one for it, seeing that these two or three months have been spent in convalescing from a serious and, in the end, useless operation. But even in cases where hopes of cure or marked prolongation of life by a radical operation are out of the question, operation may sometimes be advisable with the object of removing symptoms which are immediately threatening to life, such operations, for example, as tracheotomy, colotomy, &c., or, in the second place, with the object of taking away the primary disease from a part, such as the mouth or throat, where its continued development means intense pain and trouble, and thus of substituting for these troubles an easier death from exhaustion. A *sine quâ non* of such operations must, however, be that they are reasonably free from immediate risk, and with regard to the second class that there is a prospect of attaining the object of the operation—namely, the entire removal of the disease from the part operated on. I do not think that a dangerous operation is allowable for simple relief of symptoms, however proper it may be if a cure may be hoped for. There are thus two different objects to be held in view, and two different questions as regards operation which we must bear in mind in treating a case of cancer—namely (1), can we reasonably hope for a cure? for if we can, a serious or dangerous operation is permissible; or (2) cure not being possible, can we decidedly ameliorate the patient's condition by operation, such operation, however, not involving any great risk to life?—*The Lancet, February* 15, 1896.

NERVOUS SYSTEM.

64.—BRAIN SURGERY.

[At the 19th Annual Meeting of the Medical Society of New York, a discussion was held on this subject.]

Dr. Edward D. Fisher said that experience had shown that the brain could be extensively manipulated, or even considerable portions removed, without great danger to life. Operations on the brain were more especially indicated in (1) cases of traumatism ; (2) localised epilepsies ; (3) cases of athetosis, whether associated with epilepsy or not ; (4) tumours : (5) abscesses of the brain ; (6) cases of cerebral hemorrhage ; and (7) in cases of microcephalus. It was true that statistics showed that but a small proportion only of such cases were benefited by operation, but one successful case should have much greater weight in endorsing the operation than many failures, provided the operation rest upon a scientific basis. When the athetosis appeared to be due to cortical irritation, removal of the cortex was indicated. In operations for epilepsy, the speaker favoured the bone-flap operation, as by this method a complete restoration of the skull was secured, thus removing the danger of subsequent injury. If the dura were thickened, it should be removed. Perfect union would take place even though the bone were stripped of periosteum. A careful observation of the pulse during operations in which the chisel had been used, had failed to convince him that the blows of the hammer produced great shock, as many surgeons claimed.

Dr. M. Allen Starr discussed cases of brain tumour. He said that recent experience seemed to show that only about seven per cent. of such tumours were appropriate cases for operation. Their difficulty of access, and the uncertainty attending attempts at localising brain tumours furnished the principal obstacles to progress in this field of surgery. Statistics showed that the prognosis was the best in sarcomata—even better than in cysts, for the latter exhibited a strong tendency to return. He preferred the flap-operation to the trephine.

Dr. Charles L. Dana took up the question of "The Value of Craniotomy for Imbecility and Idiocy." His own personal experience comprised fourteen cases, three of which had been improved, while eight remained unimproved and three died. These figures corresponded very closely with the statistics collected from various sources. The congenital idiot and the imbecile represented the two classes most likely to be benefited by the operation. The former class should not be operated upon after the age of four years; the latter may be successfully treated by operation up to the age of puberty. Only in occasional instances had he seen any benefit from the operation; it never effected a cure, but sometimes produced a mental and physical improvement. He had always practised linear craniotomy, using a wide groove and lateral branches. The results were sometimes not evident for several months. It had been supposed at first that the operation brought about improvement by giving more room for the growth of the brain. This view had been quite generally abandoned, and his own theory of the *modus operandi* of the operation was that it produced a profound disciplinary effect on the idiot.

Dr. James W. Putnam, of Buffalo, said that two cases operated upon by Dr. Roswell Park by craniectomy had exhibited a very great degree of improvement. The death-rate was admittedly large, but it was the only hope of relief, and if death occurred from the operation, society had not lost a valuable citizen.

Dr. B. Sachs, of New York, read a paper on "The Surgical Treatment of Epilepsy," in which he called attention to the fact that operations for this condition were by no means so frequent in New York City as they had been a few years ago. Surgical interference, in his opinion, was only justifiable in the earliest stages, before degeneration had taken place. It was not sufficient to remove the outer table of the skull, for there might be an exostosis or a spicule of bone within. As children were not very tolerant of operations on the skull, this fact narrowed the field of operations done for the relief of birth palsies.

Dr. George Woolsey, of New York, in reporting the results of his experience with operations for epilepsy, said that only one case out of a total of eight could be really called a cure. The operation had only been undertaken in cases in which there had been a severe traumatism of the skull, and after persistent medical treatment had failed to check the mental decline. The speaker favoured the use of carver's chisels in doing the operation by the bone-flap method.

Dr. Joseph Collins thought that the discussion thus far had presented an unwarranted narrowing of the field of brain surgery. He called attention to the frequency of cases of purulent infiltration of the brain resulting from chronic purulent otitis—a condition in which nothing but operation was of avail.

Dr. Floyd S. Grego, of Buffalo, said that he had supposed until he had heard Dr. Dana's rather flippant explanation of the *rationale* of craniectomy, that this operation produced its beneficial effect by improving the nutrition of the brain. Surgeons too often failed to continue the medical treatment after the operation.—*Pediatrics, March* 15, 1896, *p.* 274.

65.—TEMPORO-SPHENOIDAL ABSCESS FOLLOWING MIDDLE-EAR DISEASE.

Dr. James Bell presented the patient before the Montreal Medical Society, and gave the following history of the case :—

The patient, a young man aged 28, had first suffered from suppurative middle-ear disease with perforation of the tympanic membrane, six years ago in the lumber woods. With the exception of a discharge from the ear he had enjoyed good health until the 1st of July last, when he began to suffer from pain and tenderness about the mastoid. There was also œdema over the mastoid, severe headache, and persistent slight elevation of temperature. About the end of August he was sent down to Dr. Buller, who trephined the mastoid on the first day of September, but found no pus. The symptoms were unrelieved, the temperature remained high, there was intense headache, tonic spasm of the muscles of the back of the neck, and slight delirium. Five days later inequality of the movements of the lower portion of the face was noted. There was slight paresis of the lower left face. On the 8th of September I decided to operate next day. There was then, in addition to the symptoms already given, a low pulse (45 to 55), but no localising symptom and no optic neuritis. I therefore decided to expose the brain by the removal of an osteoplastic flap, which would give access to both middle and posterior fossæ of the skull. Next morning, however, there was distinct paralysis of certain groups of muscles of the left arm, especially the extensors of the wrist. As it was then quite clear that the lesion was an ascending one involving the motor area, and from the history and symptoms almost certainly a subdural abscess. I simply exposed the skull by extending the original incision in the soft parts, and made a half inch trephine opening at a point one inch above the posterior root of the zygoma, and in a line with the posterior osseous wall of the meatus. In marking the point for the trephine pin with a drill, although prepared for a thin skull, and exercising the utmost caution, the drill went through the skull and wounded the posterior branch of the middle meningeal artery, which bled very freely. When the button of bone was removed with the trephine I cut away further forwards with rongeur forceps, attempting to expose the artery in order to ligate it. I was unsuccessful and was finally obliged to clamp it with the bone in a pair of Pean forceps, which were left *in situ* for several days. The dura mater bulged but did not pulsate, and on incising it a couple of drachms of fœtid pus escaped from above, and on pressing up the base of the brain about half an ounce more escaped from below with shreds of sloughy tissue. The brain surface was covered with lymph, and neither sulci nor convolutions could be identified. The wound in the mastoid antrum was made to communicate with the base of the skull, and the lower border of the trephine opening was cut away with rongeur forceps down to the level of the base of the middle fossa. A drainage-tube was inserted along the base of the skull and brought out through the wound. Chloroform was the anæsthetic used, and the operation was well borne. After the operation the temperature fell to the normal, the pulse rose to 80—90, and by next day the paralysis was noticeably less; in forty-eight hours it was almost gone, and in another forty-eight hours it was completely gone. All his symptoms improved, and he seems to be on the way to recovery. On the fifth day after operation he became alternately drowsy and irritable. Later, he became sullen and morose and difficult to manage, complained of severe frontal headache, tore off his dressings, insisted on getting out of bed, &c.; optic neuritis began to develop, and the pulse became slow and at times irregular. On the 30th September (three weeks after the first opening of the cranial cavity) the wound was reopened. Through the trephine opening a livid fluctuating mass protruded, which did not pulsate. I opened it and evacuated a couple of drachms of pus. After using an exploring needle I opened higher up, and evacuated about an ounce of pus. Passing my finger into the cavity I found it contained a considerable mass of sloughy tissue. It was carefully washed out with saline solution, and a glass drain inserted. The cavity was in the temporo-sphenoidal lobe, which was now a mere abscess wall. Chloroform was given at first in this operation but was abandoned for ether before the operation began, as it was not well taken. From the date of this operation there has not been a bad symptom. The patient speedily recovered, until he is now quite well, and his optic neuritis has almost disappeared.

Dr. G. E. Armstrong suggested that where there was headache and other symptoms of meningeal irritation, before an osteoplastic flap was made, in the absence of localising symptoms, when the tympanum and antrum were thoroughly cleaned, a strong light should be thrown into the attic. Probably a few drops of pus or a few granulations might give a lead that could be followed with a fine probe, and thus the abscess could be located in the temporo-sphenoidal lobe or often in the cerebellum. In this way the exact position might be more easily detected. He asked Dr. Bell if there was anything in the sigmoid sinus. These cases brought up another question which had been raised by Mr. Victor Horsley as to how soon cases of middle ear disease should be interfered with by trephining the mastoid. There has been many cases of middle-ear disease in which suddenly acute septic, cerebral, or pulmonary troubles ending fatally had occurred. Many of the insurance companies would not accept a person with chronic discharge from the ear. Mr. Macewen answered the question by suggesting the limit of one year, at the end of which the mastoid antrum should be trephined, the tympanum thoroughly cleaned out, and all allowed to heal. The operation was without danger and could be easily performed. The great objection raised was that there might be loss of hearing. While in some cases there was no change, and others were made worse, there were many in which the hearing was distinctly improved.

Dr. Bell, in reply, said that what was suggested by Dr. Armstrong had been done by Dr. Buller before the patient came under his care. From the swelling he had thought at first that the sigmoid sinus was infected. The history showed that the progress of the disease was anteriorly. On the 1st of September the antrum was cleaned out, but the symptoms were unrelieved, and five days later the first motor symptom appeared in the form of a slight paresis of the lower left face.—*Montreal Medical Journal, December*, 1895, *p.* 471.

ALIMENTARY CANAL.

66.—THE TREATMENT OF ABDOMINAL INJURIES WITHOUT EXTERNAL WOUNDS.

By Thomas Bryant, M.C.H., F.R.C.S.,
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[The following concludes Mr. Bryant's articles on "Gleanings from Surgical Practice."]

The following questions arise (1) in which instances surgical interference is likely to prove beneficial; (2) under what circumstances is he justified in interfering; and (3) what are the best means to enable him to carry out his views.

1. To answer the first question: In which case is surgical interference likely to prove beneficial? The surgeon must go to the post-mortem records of a hospital for the material to yield him an answer; and when he finds these cases, such as I have found and recorded in these papers, in which a rupture of one loop, or of more loops, of intestine was the result of injury and the cause of death, he rightly thinks that if this form of injury had been recognised during life and dealt with boldly and at once on its receipt a fair proportion of these fatal cases would

have been added to the list of successful cases which modern surgeons by recent methods have already been able to record. He, moreover, does not despair of achieving some success where he finds rupture of such a solid viscus as the liver, spleen, or kidneys—for modern experience justifies the hope Death also from ruptured veins, whether mesenteric or otherwise, he knows is not beyond his reach.

2. The second question consequently at once requires an answer: Under what circumstances is the surgeon justified in making an explanatory incision into the abdominal cavity for diagnostic and remedial purposes? And to the consideration of this difficult question I now pass. I have already dwelt upon the general symptoms of intra-abdominal injuries, and pointed out how, after the application of a feeble force, such as is not likely to have produced mischief, severe general symptoms may follow; and also how, after the application of a potent force, the general symptoms following the injury may be so slight as to induce the surgeon to believe that no serious intra-abdominal injury can have taken place. To support these truths I have also recorded examples in which patients have walked into hospital after the receipt of a fatal injury, and would have walked out again had they been allowed, when beneath their abdominal parietes a fatal rupture of a solid or hollow viscus had been sustained. I have likewise pointed out, and supported the view by the experience of Guy's Hospital, that two-thirds of all cases of abdominal injury tend towards recovery, and that in those the primary symptoms which may have immediately followed the accident, however grave or trivial they may have been, sooner or later passed away, and the cases went on to convalescence, unless the injury to a viscus or to the peritoneum had been of such a nature as to excite some local or general symptoms of peritonitis within a day or so of its occurrence. When, however, in any individual case any one of the general symptoms, and particularly that of collapse, persists or becomes more marked, or when for a time the symptoms seem to have ameliorated and in a few hours again become grave, the conclusion that serious intra-abdominal injury has been sustained is not only reasonable but right, and more particularly when the force which is supposed to have brought about the injury was of such a nature as to have been likely to have caused the mischief. Under these circumstances it is also probable that a solid viscus has been lacerated. If, also, under like circumstances, vomiting persists, or, having left, returns and is obstinate, serious trouble is suggested; if, also, blood appears in the renewed vomit and was absent in the primary, and its presence continues, rupture of the small intestines seems probable, and the rupture is probably jejunal.

Rupture of the liver or spleen, as a general rule, kills by hemorrhage, and when the laceration is severe and the hemorrhage is copious the patient rarely recovers from the collapse which immediately follows the accident, or if he rallies for a few minutes or but a little it is only to relapse into a deeper collapse which ends in death. Under these circumstances the surgeon has no opportunity to test his powers, and no justification for interference. When the rupture is limited in extent, and the shock of the accident or the force which produced the rupture is of a crushing nature, hemorrhage being consequently limited at the time, death from collapse need not take place, and if the treatment is judicious and movements are prevented repair may proceed even to a cure; but under other circumstances local peritonitis may be set up which may terminate favourably in rare cases, although in the majority of cases in another way. In such instances, with the first appearances of symptoms which suggest peritonitis—such as distension of the abdomen and local pain, with a return of vomiting or its aggravation—a surgeon would be quite justified in making an abdominal exploration, and I hold it should be done, for by such means a moderate mass of crushed liver may be removed and future hemorrhage prevented by some antiseptic plug. An injured spleen may be dealt with either by removal or by the same means as have been described as being applicable to an injured liver; the abdominal cavity may be cleansed from blood, and the patient thereby placed in a position in which repair is possible—that is, if from age, disease, or loss of blood the patient is not rendered incapable of bringing about repair from want of power.

Crushed kidney rarely requires surgical interference, for no organ repairs so well and satisfactorily as the kidney after injury, and it is only in exceptional instances that the surgeon's interference is applicable. But this subject does not come under consideration on the present occasion. The typical case for surgical interference is, however, that of ruptured intestine, and although its diagnosis is never certain it may be considered highly probable after the receipt of a diffused injury to the abdomen or a severe local injury, particularly if, as an immediate result of the accident, there is but little collapse and where vomiting soon becomes a prominent and persistent symptom, with lasting local pain and great thirst, and with or without abdominal enlargement. On reviewing the notes of the nineteen cases of intestinal rupture which I have recorded, these views are strongly supported, for it is interesting to read that the absence of serious primary collapse was very general; that vomiting of a persistent character was frequent, and vomiting of blood not rare; that local pain of a severe character was also common, and intense thirst a marked symptom, more particularly when the rupture was high up in the canal; and likewise that early abdominal distension was a symptom of importance, and that when present it was an indication for action rather than the reverse.

3. With the presence of these symptoms, therefore, in any case of abdominal injury brought about by forces which are likely to have produced such a rupture, and particularly if they have persisted for eight or ten hours and collapse has not been present, or, if present at first, has passed away, I should hold any practitioner free from blame if he suggested and caused to be carried out what is called a laparotomy—that is, an exploratory central abdominal incision, with the view of searching for and uniting a ruptured bowel if found to be present, or of arresting bleeding and giving a chance of life to a young subject or strong middle-aged man. But this measure, to prove successful, must be undertaken early—that is, not later than twenty-four hours after the receipt of the injury, and earlier if possible—for it seems that death within thirty-six or forty-eight hours of the accident is the rule, whilst some die earlier and a few later; but it is clear that the earlier the operation is performed the greater may be the chances of success. In old or feeble subjects such a measure is, however, out of court, but in young people and healthy subjects it ought to be undertaken.—*The Lancet, January* 11, 1896.

67.—THE SURGICAL TREATMENT OF PERFORATED GASTRIC ULCER.

By George E. Armstrong, M.D.,
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Surgeon to the Montreal General Hospital, &c.

A complication which, unless relieved by surgical measures, is fatal in about 95 per cent. of the cases, is perforation of the wall of the stomach or duodenum, permitting the contents to escape into the general peritoneal cavity, and there lighting up a fatal septic peritonitis. Although gastric ulcer is more common on the posterior wall of the stomach than on the anterior, perforation occurs more frequently on the anterior wall. The reason for this is that ulcers on the posterior wall more frequently cause adhesions, especially to the pancreas, and thus a perforation into the general peritoneal cavity is avoided. Another reason why perforation is more common on the anterior wall is that the symptoms of a gastric ulcer in this situation are less marked—which means that the ulcer is less readily recognised, and therefore less frequently subjected to rest and proper dietetic treatment. It is very important that you should be able to diagnose a perforation of the stomach when it occurs. In fact the life of the patient depends upon an early diagnosis and prompt closure of the perforation. The symptoms are not many, but they are urgent and characteristic. When an anæmic young woman, with a history of indigestion, is suddenly seized with symptoms of acute peritonitis, you should at once wake up to the fact that you may be dealing with a case of perforating gastric ulcer. A young woman, aged 20, was admitted to the Montreal General Hospital about 6 p.m. on October 9, 1895. On October 8, about midnight, she had been suddenly seized with intense pain in the epigastric region. She could put the end of her finger on the spot where the severe pain first appeared, and where the greatest tenderness to pressure still remained. During the night the pain spread along the left costal margin and then over the whole abdomen, which had already, eighteen hours after the onset of pain, become very much swollen. The pain was of a sharp shooting character, becoming more dull towards morning, but at once rendered acute by any movement of the body. She had vomited several times during the night. Her pulse was 118, of fair quality, rather high tension. Temperature 103° F. Respiration, thoracic, quick and shallow. She gave a history of having been treated in the out-door department of the hospital during the past summer for indigestion. She had suffered from flatulence and vomiting after meals, followed two or three hours later by pain in the epigastrium, which was relieved by taking food.

Dr. Byers, the House Surgeon who admitted her, at once suspected the condition present, and summoned the staff for a consultation. When I saw her she was lying in bed with an anxious expression of countenance. Pulse, temperature and respiration as noted above. On making a physical examination the abdomen was found moderately distended. On asking her where the pain was most severe she put her finger on a point about two inches below the ensiform cartilage, and a little to the left of the median line. On palpation, the abdomen was everywhere tender, but moderate pressure could be borne over the centre in the umbilical region, over the hypogastrium on both sides, and over the situation of the appendix, but over the point where pain was first felt the slightest touch caused the patient to cry out. In perforative peritonitis there is always a point of maximum tenderness, and that point is over the seat of perforation. In appendicitis it is over the appendix at the so-called McBurney's point, or if the appendix is turned up behind the colon it may be in the right loin. In perforating gastric ulcer it is over the stomach. Pain may be more generalised, but the point of maximum tenderness is always over the seat of perforation, and is the most important and reliable guide by which to localise the lesion. As far as I could judge about half the liver dulness had disappeared. The lower half of the normal area of liver dulness was tympanitic. The presence of a tympanitic note on percussion over the region of the liver is very suggestive of a perforation of some part of the alimentary canal and the escape of gas into the peritoneal cavity. The urine was high coloured, sp. gr. 1030, acid reaction, no albumen, no sugar, urea grs. xiii. to the ounce. The history and symptoms rendered the diagnosis of perforated gastric ulcer pretty certainly correct.

The prognosis was that if left alone the girl would certainly die in twenty-four to forty-eight hours of toxæmia from septic peritonitis. The indication clearly was to open the abdomen, close to the hole in the stomach, and remove so far as possible all matters that had already escaped, together with the serum or sero-pus already formed. And it was important that this should be done at once, before the infection and inflammation of the peritoneum had gone so far that a favourable result would be unattainable. Twenty-two hours had already elapsed since perforation had taken place. Fortunately the matters escaping from a hole in the stomach are not as virulent and irritating as those escaping from the intestine, and I think that this is the reason why peritonitis from an escape of stomach contents is less rapidly fatal than peritonitis caused by escape of intestinal contents.

The girl was taken to the operating room at once, and I made an incision in the median line between the ensiform cartilage and the umbilicus. On the peritoneal cavity being opened, air and sero-purulent fluid escaped. The stomach was carefully packed around with sterilised gauze to prevent further escape into the peritoneal cavity, and the opening in the anterior wall of the stomach readily discovered. It admitted my forefinger easily. The edges of the opening were, I should say, an inch or more thick. The greater part of the thick edge proved to be lymph. Now, one cannot stitch lymph. It will not hold a suture. The suture cuts out as soon as any tension is put on it. I had, therefore, to gently peel off the thick layer of lymph that I might get sound stomach wall to hold the sutures. On removing the lymph, I found that the ulcer had been evidently closed for a time by it, and that escape of stomach contents had occurred only when this reparative material had failed in its object, and that the ulcer was a very large one. When it was drawn out with its edges together the sew line measured

3½ inches. The edges were everted, and the mucous membrane had become adherent to the border of the rent throughout its entire extent. I closed the opening in the manner that you have seen done in the wounds of the intestines, that is, first a continuous suture passing through all the coats of the stomach wall. This I believe to be an important part of the suturing. I then inverted the suture line and passed a continuous Lembert suture from one end of the rent to the other. If this is done neatly and carefully, it effects a closure absolutely water tight and air tight. After the closure was completed I wiped out all the fluids and lymph that could be reached, passed a glass tube surrounded by iodoform gauze down to the suture line, passed another small strip of the same down the calibre of the tube and closed the incision with two rows of sutures, catgut being used for the deeper layer, and silk-worm gut for the skin. I then made a small opening in the median line, midway between the umbilicus and the symphysis pubis, just large enough to admit a half-inch glass drainage-tube, which I passed down to the bottom of the pelvis. It was well that I did this, otherwise I might have lost my patient, for there escaped through this tube fully 20 oz. of yellowish sero-purulent fluid. The tubes were removed on the fifth day. The patient has made an easy recovery.

Enemata of peptonised beef tea, with half an ounce of brandy, were given every four hours for seven days, and were well retained. During the first three days nothing was allowed by the mouth except a teaspoonful of water every half hour to allay the thirst. On the third day she was given an ounce of peptonised milk every two hours. This was gradually increased day by day. On the fifteenth day she was given custard and a softly boiled egg. Then milk toast and arrow-root. At the end of the third week fish and chicken were allowed, and she now takes three pretty goods meals daily.

Another patient was operated on by my colleague, Dr. Kirkpatrick, about a year ago. She made a perfect recovery, and has remained in perfect health ever since. So far as I know these are the only cases of perforated gastric ulcer that have been operated upon in Montreal, and as you see they have both fortunately been successful.

In his Ingleby lecture, Barling has reported 37 cases by various operators, with 13 recoveries. Several operations for perforating duodenal ulcer have been reported with, so far as I know, only one recovery.

Closure of a perforated ulcer on the posterior wall of the stomach is more difficult. Probably the better plan would be to approach it through an incision in the anterior wall of the stomach. In that case the Lembert suture would be applied first, and the through and through suture afterwards. The opening in the anterior wall of the stomach being closed in the same way that I closed the opening caused by the perforating ulcer.—*Montreal Medical Journal, January*, 1896.

68.—SUB-DIAPHRAGMATIC ABSCESS.

[The following occurs under "Progress of Surgery" in *The Hospital, May* 23, 1896 :]

Mr. Godlee discusses this in a clinical lecture (*International Clinics*, iv., 3). If the collection of pus is intra-peritoneal, he thinks it will have arisen from a perforation of the stomach, duodenum, or colon, or from disease of the liver or spleen; whereas, if extra-peritoneal, it may start from such structures as the kidneys, the posterior part of the liver where it is uncovered by peritoneum, the cæcum, and the vertebræ and ribs. He draws attention to the fact that abscesses, either in the liver or between it and the diaphragm, may cause dulness reaching as high up as the second rib, and records a case of suppurating hydatid cyst of the liver, which was opened in mistake for an empyæma, in which the dulness ascended to this level. The importance of recognising this is pointed out, as otherwise the healthy pleural cavity may be opened, in the attempt to evacuate the pus. The symptoms of what has been called subphrenic pyo-pneumothorax are described. This condition is due to perforation of the stomach or duodenum, gas and pus collecting between the diaphragm and the liver shut in by peritoneal adhesions. The conditions may be mistaken for true pyo-pneumothorax, and by incising the chest through an intercostal space the healthy pleura infected, whereas an incision below the ribs in front would safely open the abscess-cavity. The distinction between the two conditions depends on the history of the case and the presence of abdominal swelling. One very interesting case of the kind is recorded in which there was a serous pleural effusion, above the collection of pus and gas beneath the diaphragm. First stinking pus was drawn off through the ninth inter-space in the scapular line, then serous fluid at the same spot. Finally the abscess was opened low down over the side of the chest, the healthy pleura being reflected from the diaphragm before the latter was incised. An interesting case of sub-diaphragmatic abscess is also recorded, due to caries of the dorsal spine. The dulness reached as high on the left side as the eighth rib behind, and resonance was impaired to the angle of the scapula, the heart being pushed over to the right, and a loud systolic displacement bruit produced. The murmur was very distinctly heard all over the region occupied by the abscess, but was not heard at the apex of the heart.

Dr. Carl Beck (*Medical Record, February* 15, 1896) considers that the diagnosis of subphrenic pyo-pneumothorax can be made by observing that instead of liver dulness, a profound and full sound is present, and below the right costal arch the liver is pushed far into the abdomen, and its lower border is easily recognised by palpation and percussion. He thinks the history is often an important guide as to the location of the abscess. In subphrenic abscess there is often a history of previous abdominal disturbance, but none of cough and expectoration. In encysted pleuritic effusions the distinction from subphrenic abscess is often impossible. Spontaneous cure in subphrenic abscess he considers extremely rare—only six times in 104 cases. He opens the abscess by resecting a portion of the eighth, ninth, or tenth rib in the mid-axillary line, and does not try and avoid the pleura, as he thinks the danger of pneumothorax is largely prevented by loss of the " aspirating " power of the diaphragm from the interference with its action by the subphrenic abscess. He does not fear infection of the healthy pleura by the pus. In one case which he records, in which the pleural sac was encountered in the operation, and the subphrenic abscess opened through it, no pneumothorax occurred, and the patient made an uninterrupted recovery ; whilst in another the air entered the pleura with considerable noise, and the face of the patient assumed a cadaveric appearance, and the pulse entirely disappeared. After the cavity had been packed with iodoform gauze, and stimulants administered, the patient rallied, and on the following day the abscess was opened, the edges of the diaphragmatic incision being sewn to the skin.

Dr. Leith records (*International Clinics*, iv., 4) a case of empyæma due to perforation of a gastric ulcer in a child aged ten. An adhesion had first taken place between the stomach and spleen at the site of the ulcer, and he thinks " some form of pyogenic organisms had made its way from the stomach through the floor of the ulcer into the adhesions, and thus gradually caused the suppuration track, which culminated in the necrosis of the diaphragm, and by an extension into the pleura set up the empyæma." There were no symptoms of gastric ulcer. On opening the empyæma very fetid pus escaped. Reference is made to a case of gastric ulcer in a youth of nineteen, which penetrated into the left ventricle of the heart. The rarity of gastric ulcer occurring in children is pointed out. Empyæma is described as arising from perforations of a gastric ulcer either by the stomach wall becoming adherent to the diaphragm, and the ulcer perforating through its coats and then through the diaphragm, or by the formation of a more or less perfectly circumscribed peritonitis, which gives rise to an abdominal abscess, bounded above by the diaphragm. The pus may then discharge into the pleural cavity, or septic organisms may be carried from the abscess into the pleura by means of the lymphatics. The diagnosis of perforation of a gastric ulcer as the cause of empyæma can be made only if the symptoms of gastric ulcer have been marked, and then only with certainty if, as sometimes happens, portions of food are found in the pus or sputum. Empyæma from perforation of a gastric ulcer is nearly always on the left side.

69.—THE CURABILITY OF HERNIA.

By C. H. Golding-Bird, F.R.C.S., Surgeon to Guy's Hospital.

[The following is taken from Mr. Golding-Bird's paper :]

We will assume a patient before us with a commencing inguinal hernia—a bubonocele, in fact; and we are at one faced by the question—Is it curable? and if it is, can it be cured without operation? The only non-operative method would be by the wearing of a truss; but, after all, is this really curative, or only palliative? The question can be certainly answered, when the following considerations have been well weighed in the surgeon's mind. A truss acts not by corking up a hole but by flat or pad-like pressure preventing the exit through an abnormal aperture of some of the abdominal contents, and thus far it is palliative. It can be curative only in the sense that it can bring about closure of the aperture, and this in one of two ways. In the congential hernia of infants we are dealing with a matter of delayed development; if, therefore, we can in the earliest months of life so adapt a truss that the gut never protudes, we allow in very many cases that natural closure to continue and come to a successful termination, that should have occurred *in utero*—the child is then cured by his truss. But in later child life, and in young adult life, there is no tendency for this normal development process to go on; and though the aperture may physically contract because it is never now allowed to be stretched, yet there is, and there it will be, a constant source of danger to the owner. These last remarks apply also to the acquired form of hernia, whatever the age; and the same after-danger must remain if the truss is removed, unless some obliterative adhesions form, or some viscus, as omentum, become closely adherent across the mouth of the sac. Such cases do occur, but very rarely indeed; and who is to know when they really happen? A young man is advised to wear a truss for a hernia; after, say, seven years, he asks if he may leave it off, because he has seen no sign of his rupture for the last five years—what proof is there that he is cured, in the sense of some permanent adhesive closure, or only temporarily relieved by a physical contracting down of the opening into the sac? There is none except a trial, with the result, most likely, that within a short time of leaving off the truss the hernia will come down, and not improbably be strangulated through the ring being now smaller than formerly. It may be the other way, and he may be cured for good; but the chances are against this good fortune, and the risks in waiting for it by leaving off his truss hardly compensatory.

These are not fanciful statements; if you want statistical proof, in the absence of your own experience or practice, I refer you to such a work as Macready's exhaustive one on "Ruptures." Here are a few figures, which he quotes from those of the National Truss Society:—Under twelve months of age, the cure by truss is 58 per cent.; from one year to five years, only 10 per cent.; and, after that, practically *nil*; and in acquired hernia the truss cures at fifteen years are 5 per cent., and at thirty years only 1 per cent.—again practically *nil*. Except, therefore, for infants under a year old we must discard trusses as a likely means of cure; that, after a truss once worn means, for the bulk of patients, that it has "come to stay" a life-time.

The recognised methods of to-day may be classed under four heads; and they are interesting as showing the evolution of radical cure by operation. A full account can be found of each in text-books. I shall give, therefore, but their essentials. (1) The practice of Mitchell Bank's method is to expose the sac, thoroughly detach from all surroundings, even right up to the canal, pull down as much "neck" of sac as possible, and apply the ligature as high as possible; the pillars are then sutured.

Criticism.—It apparently fulfils the requirements of a curative operation, but its permanency depends upon how thoroughly the peritoneum has been pulled down, so that the ligature being applied very high up may quite obliterate the funnel in the inner aspect of the peritoneum. In children it is a successful operation, the peritoneum being very easily pulled down on its loose subserous connective tissue; but there is yet a still better and surer method of attaining this end.

(2) The practice of Ball's method is to expose and thoroughly isolate the sac right up to the abdomen, to twist it on its own axis till it becomes like an umbilical cord, then to ligature it to prevent its untwisting, and, finally, to suture it in the situation and manner mentioned above.

Criticism.—The twisting of the sac is the great gain in this method, for, when thoroughly performed, the general peritoneum beyond the true neck of the sac, and forming the "funnel," may be seen to be drawn down (by its difference in colour); and this, being thoroughly torsed, more certainly obliterates the funnel than a ligature alone could do, however high up it may be applied. This method of severe torsion puts a great power into the surgeon's hands; it is not the mere twisting of the sac in order to obliterate its cavity, but such a twisting as shall literally screw down the peritoneum itself. I feel, however, that the leaving of the twisted sac in the canal is the weak point of the operation. As I have already said, "corks" cannot be relied on, though probably one of twisted sac is to be more so than an omental one; yet great success has attended Ball's method, for the real cure lies in the perfect peritoneal obliteration.

(3) In the practice of Kocher's method the earlier stages are just as in Ball's operation, only the skin incision is carried right over and along the canal to a point near the anterior iliac spine, where eventually the sac will emerge. The sac being now thoroughly torsed, a small puncture is made in the tendon of the external oblique at the highest point of the skin incision, and a pair of suitable forceps is thrust in and, guided by a forefinger in the canal, is made to force its way in the subperitoneal tissue and to emerge at the external ring; here it seizes the fundus of the twisted sac, and, being withdrawn, it brings it with it out of the puncture in the tendon. The rope-like sac is now turned down on the face of the external oblique over the line of the canal, and there sewn in such a way as to make a kind of permanent pad pressing on the anterior wall of the canal.

The criticism I would offer mainly concerns the after-treatment of the sac. I fail to see that any real object is attained by sewing it in front of the external oblique tendon, whilst in one case in which I did it the sac sloughed away, though primary union had immediately followed the operation; and, further, should a light truss be eventually required, it might be an obstacle to the instrument being comfortably worn. The great advantages of Kocher's operation are the rapidity with which it can be performed, and no deep ligature has to be employed; whilst it fulfils all the requirements of a cure, as far as they are attainable.

I have very largely employed this operation myself, almost abandoning other methods; but I have found the following modification of advantage. The first incision is merely over the neck of the sac, and is not prolonged up on to the abdomen. When the twisted sac is ready for being drawn up, I make a three-quarter inch incision near the anterior iliac spine, reaching into the external oblique tendon. Through this small opening the sac is now drawn, and then, a stitch being passed through it and through both sides of the incision in the external oblique, it is tightly tied, thereby preventing the untwisting of the sac and uniting the cut in the tendon, and all sac superficial to this is then removed. A superficial stitch closes the skin, and a suture is put through the pillars of the ring if thought advisable.

These three methods show a distinct evolution in procedure; and to them or the following may all the accepted operations of the day be referred, being to all intents and purposes mere variants of them.

(4) The fourth method is the well-known one of Macewen; and though for many years before the profession, I have put it last, as it is not one of the "torsion" class of operations.

Its practice is, after due isolation of the sac, to pass through the parietes, at a point above and external to the inner ring, a mounted needle carrying a stout ligature. It is guided as the forceps are in Kocher's method, out at the external ring, and then so made to pierce the sac, on one side, that it pleats it like an accordion. This is repeated on the other side of the sac in such way that when the suture is finally *in situ*, its two ends are out at the upper puncture, whilst its middle is interlaced in the sac. On pulling on the former the sac is drawn up as a pleated mass into the subperitoneal tissue, just at the inner ring, and tied there. A special suture is afterwards employed at the external ring.

Criticism of an operation which really was the first to make cure of hernia a certainty, and which leaves nothing to be desired in principle, and which is universally performed, is unnecessary. I therefore have but to remark that the same end which the other methods attain by twisting—viz. the obliteration of the "funnel"—is here attained by making a boss or pad of the sac—not as a cork in the canal, but as a subperitoneal tumour, making the general peritoneum at that point convex, and ill-adapted to allow coils of intestine to lie and impign at the site of the former exit of the hernia.

It is an operation that has stood the test of many years; nor have I ever had a failure from it that I could trace. But if there is a condition that renders it—as well, indeed, as others—not quite satisfactory after a time, it is the congenital form of hernia of young adult life. Not that it is intrinsically more difficult to treat than the acquired form; but there seems often a general weakness about the parietes in the neighbourhood of the canal, so that a yielding of the parts, even after operation for cure, is more than it should be on exertion. Once after Macewen's operation, and once after Kocher's, I have seen this so marked as to advise the wearing of a light truss with a broad flat pad, lest any relapse should occur. After operation for cure, however, no truss should be needed; although, in working men, who often have to return to severe labour immediately after, the employment of a truss for a couple of months is a useful precaution.

None of the operations described can really be said to give rise to serious shock; and unless the state of the patient's health were such as to preclude any surgical operative treatment at all or unless his age were such as not to make it worth his while to be relieved of his truss, there is no reason that radical cure should not be adopted as a routine treatment as much as the truss has been in the past. Certainly, in operating for irreducible or strangulated hernia, the kelotomy should be concluded with some form of radical operation if the patient's strength allow of it; though it is hardly necessary to say that more anxiety attends these cases in which we *must* operate at any moment, than where we can choose the best time and place for so doing.—*The Practitioner, January*, 1896.

70.—INTESTINAL RESECTION.

[The following is a leading article taken from the *Medical Press and Circular of November* 6, 1895 :]

The great question at the present time in intestinal surgery is whether or not the introduction of the button and the bobbin constitutes an advance on the pre-existing methods of dealing with divided ends of intestine, whether, in fact, the recovery of the patient is better assured with one or other of these contrivances than with the methods which provide for union without any such intervention. The eagerness with which bobbins and buttons have been taken up by surgeons all over the world appears to justify the assumption that they in some measure "fill a long-felt want." It is certain, on the other hand, that the presence of any foreign body within the intestine is in itself a disadvantage, and the discussion at present turns on the point whether the advantages outweigh the disadvantages. Of course experience is the only trustworthy criterion, and sufficient time has not yet elapsed for an adequate number of cases to have been reported to compare with the enormous numbers available of cases treated by the older methods. In the absence of this or that mechanical contrivance, Maunsell's method appears to meet with most favour, but to make the junction secure against leakage the careful surgeon considers it desirable, if not, indeed, absolutely necessary, to insert an additional row of sutures. This precaution, unexceptionable though it be from a surgical point of view, is open to the grave objection that it involves a serious prolongation of an already tedious operation. One great difficulty in arriving at a definite conclusion on this subject is the fact that in this procedure, as in all innovations, the pioneer surgeon exercises a judicious care in the selection of patients to be operated upon, choosing in preference those who present conditions most suited for the intervention, leaving the others to be dealt with by the older methods. This is very natural because the surgeon who departs from established custom in such matters is risking his reputation, and it is not until a new operation has received the sanction of successful practice that it can safely be applied on a large scale. The great advantage claimed for the bobbin or button—for from our point of view they must be discussed together—is that they permit of union in a much shorter time, with greater security against leakage. By acting as a splint for the sutured intestine they protect the parts against the influence of peristaltic movement and prevent the intestinal contents coming into contact with the healing tissues. When, their functions having been fulfilled the healing of the gut having taken place, they become detached and fall into the intestine, they are usually eliminated in due course *per anum.* Sometimes, however, they are not so eliminated, and it is here that the critic intervenes. Cases are on record, and there are probably a much larger number not recorded, in which the presence of the foreign body in the intestine has caused intestinal obstruction necessitating subsequent surgical intervention, and in others they have even determined fatal perforation. Short of these untoward events they are very apt to set up violent diarrhœa, which jeopardises the freshly established union. Mr. Mayo Robson has endeavoured to overcome one of these objections by employing the decalcified bone in the manufacture of the bobbin, but, so far, we are not in possession of trustworthy statistics showing the precise measure of immunity against accident that has attended the innovation. There seems to be a general consensus of opinion that these mechanical contrivances are better suited for large intestine cases than for those in which the lesion to be dealt with is situated on the other side of the ileo-cæcal valve; indeed, a protest has been formally entered against their use becoming the routine practice in small intestine cases. In a recent discussion at the Medical Society of London on this subject it transpired incidentally that operations of this kind, undertaken on distended intestine, are vastly more fatal than when performed on intestines devoid of contents. How to secure this more favourable condition is one of the problems which contemporaneous surgeons have set themselves the task of elucidating. We have expressed the opinion that experience alone can decide the question of the preference to be given to the one or the other procedure, but, in reality, what experience will do will be to settle in what particular category of cases each is peculiarly applicable. Even with the limited experience so far to hand it cannot be doubted that bobbins and buttons have come to stay, and by and by limits will be assigned to their respective spheres of usefulness. When surgeons of the standing of Mayo Robson and Allingham record their deliberate opinions in favour of their use we may feel sure that they present advantages under certain conditions which will secure for them continued popularity. Moreover, the last word has not yet been said on the form which they should take, the substance of which they should be made, or of the technique of their employment. It does not seem as if much scope remained for inventors in the matter of sutures or in the manner of applying them, but no one can doubt that surgical ingenuity will discover many notable modifications and ameliorations in the manufacture and application of the contrivances in question. Mr. Keetley, with a tact not devoid of humour, compared the discussion to one bearing on the relative merits of the chain or the lock for securing the front door, or of buttons *versus* hooks and eyes as fastenings for garments. Properly applied either device will attain the object in view, but it does not follow that they are on terms of equality. Judging from the progress that has been effected in this department within the last decade we are probably justified in anticipating further strides within the near future, and each such discussion marks a day's march towards the goal of surgical proficiency in the measure of perfection allotted to surgical intervention. If surgeons will faithfully and conscientiously report all cases, without fear, favour, or affection, the ultimate elucidation of the questions under discussion will be markedly accelerated.

76.—INFANTILE INTUSSUSCEPTION.

By Frederick Holme Wiggin, M.D., New York.

[The following is taken from the appended remarks in Dr. Wiggin's paper.]

The total number of cases of infantile intussusception collected and reported in this paper is 103. Of these nearly 50 per cent. occurred during the fourth, fifth, and six months, in nearly equal proportions; 75·4 per cent. of the cases occurred in males, and 89 per cent. were of the ileo-cæcal variety. Pritchard in his paper on intussusception called attention to the probable part played by external violence in the causation of this disorder during early life, particularly the careless manner in which infants are picked up and doubled over the arm of those caring for them, thereby injuring and causing a temporary paralysis of some portion of the intestinal canal. Jacobi has also called attention to this matter, particularly to the way in which infants are violently jumped up and down to quiet their cry. This seems to have been the prime factor in the causation of the invagination in the writer's case. The age during which the infant is most liable to be affected by this disorder seems to substantiate these views. In one case the invagination was caused by an intestinal tumour.

In these cases there seems to be nothing of unusual interest in the symptomatology to record. The disorder manifests itself by means of a sudden onset of severe abdominal pain, followed by vomiting and the passage of stools containing blood and mucus. Tenesmus was present to a marked degree only in those cases where the gut portruded from the anal orifice, or where the tumour was down in the rectum. The symptoms varied in intensity in the usual manner, in direct proportion to the degree of constriction the bowel was subjected to, as indicated by the character of the pain and the amount of blood passed from the anus. The sign of the disorder, an abdominal tumour, was seldom absent, as was to be expected in such a large proportion of cases of the ileo-cæcal variety. Several of the reporters call attention to the necessity in all suspected cases of this trouble of making a conjoined abdominal and rectal examination, for in some instances a tumour was revealed by this means after abdominal or rectal palpation alone had failed to discover it. A protruding anal tumour occurred in the usual proportion—about six per cent. of the cases. Cure by sloughing, which is exceedingly rare in these cases, was met with twice, in Beeston's case and in one recorded by Mr. Cripps in the St. Bartholomew's Hospital Reports for 1892.

Thirty-nine of the cases were treated only by means of inflation, or enemata, or both. Of these, sixteen, or 41 per cent., recovered. The average hour after the onset when the treatment began was the forty-first.

The cases of this group which terminated fatally were twenty-three in number, a mortality of 59 per cent. The average age of the infants was about five months. The average hour following the onset when treatment was begun was the sixty-ninth. In one case while the enema was being administered under chloroform narcosis, and in the inverted position, the infant vomited, inspired the vomited material, and died. In several cases, collapse followed the administration of the enema, and in nearly all cases there is the same story of the inefficiency and uncertainty of the method, the tumour disappearing only to return after a short interval, and the treatment repeated again and again, the occasional repeated administration of chloroform with alternating injections of air or water combined with massage, often roughly applied, till finally death mercifully came to the infant's relief. In all of these cases where notes of a necropsy were found, the same tale was told of gangrenous, unreduced, invaginated bowel ; invaginated bowel easily reduced by internal manipulation or traction ; or bowel lacerated as a result of the violence caused by the over-distention of the diseased intestine. In one instance, the gut was found to have become gangrenous twenty-eight hours after the first onset.

If all the cases are counted in which intestinal distention was practised to reduce the invaginated bowel, some of which cases were afterwards treated by abdominal section, we will find that their number is 72. Of this number, failure to effect reduction occurred in 54 instances, or 75 per cent., which percentage would have represented the mortality of this method of treatment had not other means been afterward tried, taking them out of this category. These figures approximate closely to those given by Hare as the percentage of mortality following this method of treatment. In one instance where laparotomy was performed after enemata had apparently failed to effect a reduction, as evidenced by a continuance of the symptoms, it was thought that the swollen ileo-cæcal valve had, after the reduction of the invaginated bowel, stimulated the tumour ; and in another case it was supposed that the invagination had been reduced by the distention but that the bowel had become paralysed and had been unable to recover itself.

Therefore, it would appear that if it is desired to treat a case of infantile intussusception by means of intestinal distention (which the writer freely admits, after a careful study of this subject, notwithstanding the fact that the only case which has come under his personal observation was successfully treated by enemata, he would be unwilling to employ) at least one and one-half pints of tepid saline solution (one teaspoonful of salt to the quart) should be placed in a reservoir which is not to be elevated above three feet ; and if this is not successful after one trial the method should be abandoned, and other means to effect a reduction employed. If it is thought that reduction has occurred under this method, as evidenced by the apparent disappearance of the tumour, the infant should be placed in its crib and quieted by other means than by opiates or motion, to the end that if reduction has not really been effected the fact may be made manifest by the symptoms at the earliest possible moment, so that other treatment may be attempted while the chances of a successful outcome, though diminished, are not absolutely gone. It is well to recall the fact that in those cases which were successfully treated by enemata the average hour after the onset at which treatment was begun was the forty-first, and in those cases which terminated fatally it was the sixty-ninth.

The history of the treatment of infantile intussusception by the method of intestinal distention, by either air or water, is certainly a dark page in that of our science.

Laparotomy was performed in this group of cases 64 times for the relief of infantile intussusception. It resulted successfully in 21, or in 32·8 per cent. of the cases operated upon. The average age of these infants was about six and one-half months. The average hour from the onset till the time of operation was the forty-fourth. In 17 of the cases inflation and enemata, or both, had previously been tried without success. In 8 cases the invaginated bowel was readily reduced, and in 10 cases it was reduced with difficulty. In 3 of the histories nothing was stated regarding this point. The length of time required for the performance of the operation was in one instance stated to be eight minutes, and in another thirty-five minutes, which latter included the administration of an enema.

Laparatomy was followed by death in 43 of the cases, giving a mortality of 67·2 per cent. The average age of these patients was about five months, the youngest upon whom enterectomy was performed being only three days old. It lived six days thereafter, probably dying of inanition, as the operator opened the first piece of bowel which presented itself in the wound. Had he sought for and reduced the invaginated bowel, it seems almost certain that the infant would have recovered. If these cases are subtracted from our list of unsuccessful abdominal sections in which either the operation was abandoned, the bowel incised and an artificial anus made or resected, and an anastomosis effected, we shall have 45 cases, of which number only 24 resulted fatally, reducing the mortality to 53·4 per cent.

If we count only the operations, successful and unsuccessful, that have been performed since the perfected technique of abdominal surgery has become generally known—say, since 1889—and throwing out as before the cases in which the operation has not been completed, the bowel incised or excised, we have a total of 18 cases, of which 14 were successful, and 4 were unsuccessful, giving a still lower percentage of mortality, or 22·2 per cent., which the writer believes is a fair estimate of the risk to-day of abdominal sections performed on a young infant for the relief of this disorder, if performed within the first forty-eight hours of the onset.

It would seem that if an infant suffering from this disorder were first seen in collapse, it would be wise before attempting the operation to stimulate the infant, and if it responded, to proceed; otherwise it would be useless to do so. The operators in these cases have almost invariably employed the medium incision satisfactorily. The best method for reducing the invaginated portion of bowel seems to be that wherein the tumour is encircled below its apex by the finger and thumb, while the intussuscipiens or sheath is held a few inches lower down, the apex of the tumour being pushed in an upward direction. Traction from above the tumour should not be employed. If, however, the tumour prove irreducible (although so far as the writer has knowledge there is no recorded case of intestinal resection or an artificial anus in an infant under twelve months of age which has proved successful), it is the writer's belief that the method devised by the late Prof. H. Widenham Maunsell, is the best that has been devised for treating this most unfortunate complication, caused by delay.

A slit is made in the intussuscipiens and gentle traction made on the intussusceptum until its neck appears outside the opening in the intussuscipiens. The base is then transfixed with two straight needles armed with horsehair, and the intussusceptum is amputated a quarter of an inch above the needles, leaving a fair stump beyond them. The sutures are now passed through the invaginated bowel, caught up in the interior of the bowel, divided and tied. This having been accomplished, the invagination is reduced, and the longitudinal slit is closed.

Disastrous as we have already proved the treatment of infantile intussusception by means of intestinal distention to be, the results obtained from 1828 to 1889, when abdominal section was finally resorted to, seem to have been even more so, giving as it did a higher percentage of mortality, or 84 per cent., as against 75·4 per cent. But it must be borne in mind that it was always a last resort.

Rydygier, of Cracow, in discussing intestinal invagination at the last meeting of the German Surgical Congress, held in Berlin during April, 1895, is reported to have said:—"The cases are usually treated too long by internal remedies, and accordingly come too late to the surgeon. The mortality is, therefore, very high, 75 per cent, especially in acute cases."

Further testimony or argument would seem to be unnecessary, and we must at least begin to realise the important part played by delay in these cases, as it has in all other forms of intra-abdominal disease, in affecting the prognosis unfavourably.

If by this clinical demonstration of the disease, and of the results of its treatment from 1828 to 1895, the general profession and the laity could be impressed with the facts that acute intussusception is in reality a form of strangulated hernia; that the subacute variety is an irreducible hernia; that enemata are far from being devoid of danger in their administration; that abdominal section performed under modern conditions and during the first forty-eight hours of the disorder, has a chance of success represented by 78 per cent., which would speedily rise as the cases came more frequently under operation during the first twenty-four hours.—*Medical Record, January* 18, 1896, *p.* 73.

72.—FIVE UNUSUAL CASES OF ABSCESS IN CONNECTION WITH THE VERMIFORM APPENDIX.

By W. Hale White, M.D., Physician to Guy's Hospital.

The five following cases which I have seen during the past eighteen months present so many features of interest that they seemed to me to form a group worth a brief record. All five are rare, and a correct diagnosis is of such immense importance that no one can be too familiar with all varieties of the disease. The first four illustrate that we should always bear in mind that any suppuration within a radius of six inches from the cæcum may arise from disease of the appendix. This rule enabled us in Case 3 to predict that an abscess, presenting just above Poupart's ligament on the left, would be found to arise from the appendix; and I have made a post-mortem on a patient sent to the hospital, with a diagnosis of right femoral hernia, who suffered not from this but from an abscess connected with the appendix, and presenting through the right saphenous opening. Perhaps the most extraordinary case is the first, in which an abscess connected with a very long appendix formed on the underneath surface of the liver, and presented between the liver and the stomach. The commonest of the five cases is the fourth, and it serves to remind us that many cases of right-sided perirenal abscess owe their origin to the appendix. This is a point which, I feel sure, is often overlooked, but which I have seen demonstrated in the post-mortem room. In this case operative interference was easy, but in the first three it was very difficult, and it will be observed that in two an exploratory laparotomy led to the rupture of the abscess into the general peritoneal cavity, and the other case got well without operation.

Another point to which I would direct attention is that often in these cases the temperature is but little raised. This was very striking in the case in which the abscess burst into the rectum, and also in the one in which it formed in the left side of the pelvis.

In two of the cases the liver suffered. In the first the abscess came in contact with the superior mesenteric vein and caused thrombosis in it, with the result that the liver had multiple secondary abscesses in it. It is, I believe, excessively rare for this to happen. In the other there was a single large abscess in the liver in association with an abscess in connection with the appendix. This is described, but it, too, is very uncommon. We, indeed, know nothing of the pathology of the single large abscess of the liver which occurs in association with intestinal ulceration in persons who have never been abroad. Not long ago a patient under my care with ulcerative colitis presented this combination. His case formed the subject of a clinical lecture published in the *Lancet*, March 31, 1894.

Case 1.—An abscess in connection with the appendix presenting between the liver and stomach in a man aged 19.

Case 2.—Abscess in connection with the appendix bursting into the rectum in a youth aged 15.

Case 3.—An abscess on the left side connected with the appendix in a man aged 23.

Case 4.—Appendicitis forming an abscess in the renal region in a man aged 24.

Case 5.—Appendicitis causing a local abscess and associated with a single large abscess in the liver in a female aged 24.—*The Practitioner*, *November*, 1895, *p.* 452.

[The details of the cases have had to be omitted here. All the cases except Case 2 were operated upon. Case 1, 3, and 5 died, and Cases 2 and 4 recovered. Mr. Watson Cheyne saw No. 2 ; as the patient was doing well, had no hectic fever, and the abscess would be extremely difficult to draw, it was decided not to interfere surgically.]

73.—SYPHILITIC ULCERATION OF THE RECTUM.

By James P. Tuttle, M.D.,

Adjunct Professor of Surgery and Lecturer on Diseases of the Rectum and Anus in the New York Polyclinic.

Ulceration is, in my opinion, the almost invariable precursor, if not the cause, of syphilitic stricture of the rectum, and is, therefore, the important element to be understood ; the essential condition to be diagnosticated.

When once the muscular wall has become infiltrated, its fibres atrophied, and the interstitial tissue becomes sclerotic, there is no longer any hope of curing the stricture. Our only course then is palliation or resection. When the condition is recognised in its early ulcerative stage, before the above lesions have taken place, much may be done; indeed, the large majority of the patients may be cured.

Between the secondary and tertiary syphilitic ulcerations of the rectum it is almost impossible to draw the line, unless we make it in weeks or months. Ulcers of secondary appearance may come on years after infection, just as a secondary skin eruption may recur after five or ten years in a properly treated case of syphilis. I prefer, therefore, to confine the term tertiary to ulcerating gummata, and call all others secondary or secundo-tertiary. The time at which these ulcers occur varies from the third week after infection to the most remote period of life, and their characteristics do not differ much whether occurring early or late, with the exception that the later in the disease the more likely are the ulcers to involve the deeper layers of the rectal wall. They are of variable shape, generally oval, but running up and down the rectum instead of around the gut as is the case in tubercular ulcers. They are crenated, crater-shaped, with sharply cut, infiltrated edges, never undermined, with grayish, sluggish-looking bases, and bleed easily upon touch or friction. This condition of the edges, this colour of the bases, this hemorrhagic tendency, positively diagnose these ulcers from tubercular ulcers, which have a light yellowish look, are nearly always undermined and ragged at the edges, discharge a thick muco-pus, and rarely bleed. The early secondary syphilitic ulcers do not, as a rule, involve the muscular layers of the rectal wall, but if superficial, and if treated at this stage they disappear, leaving behind no cicatrix or contraction. They soon become chronic, however, and invade the deeper tissues, one after the other, until they lay bare the sacrum, perforate the vaginal wall, or even the peritoneum itself. The ulcers have a tendency to extend up the bowel, instead of around it, although they do sometimes take the latter course, and as they advance from point to point the older portions heal and leave behind a smooth, white, depressed cicatrix, with slightly pigmented borders, the essential characteristic of which is to persistently contract. The bases of these ulcers are at first soft and œdematous, but, as they become more chronic and progress, cellular infiltration takes place in the submucous and muscular coats. The walls of the rectum assume a stiff and leathery feeling, and narrowing of the canal begins. The muscular fibres degenerate into fibrous tissue, and there is left a contracting, connective, or cicatricial tissue, the prominent feature of which is to hypertrophy and contract, and this is the condition which produces incurable stricture of the rectum. During this formative stage we may have almost an occlusion of the gut by a tissue differing much from the dense and cicatricial tissue, which is the last stage of syphilitic stricture. In this condition there is a localised, cellular infiltration, which is not dense and hard, but soft and easily torn, and composed of new embryonic cells, as will be seen from the pathologic examination given by Mallassez (Dict. Encyc., page 728). It appears that the hard connective or cicatricial tissue stricture is the result of preceding ulcerative processes.

In women, recto-vaginal fistulæ are more likely to be found before the permanent cicatricial stricture is formed, and in my experience they are invariably below the contracted point. Especially is this the case if there be anterior rectocele, because the hardened masses of fæces and the irritating discharges lodging in this pocket, the walls of which are already thin and inflamed, cause sloughing and breaking through into the genital tract. These fistulæ are not due to straining in order to pass the contents of the bowel through a strictured channel, but are purely the result of ulcerative processes.

The first stages of stricture consist of ulceration, followed by a cellular deposit of soft embryonic tissue in the sub-mucous and muscular walls of the gut. This tissue becomes organised into connective tissue, hardens, contracts, and the surfaces heal over, leaving a shining, bluish-white cicatricial appearance. In their early stages these strictures are soft and dilatable, but after the cicatrisation has taken place the muscular tissues become infiltrated and atrophied or degenerated, and dilatation is no longer practicable. The early recognition of the ulceration, and the prevention of these later sequences, should therefore be the aim of syphilographers and rectal surgeons. When the permanent stricture has once formed, the condition is more in the domain of the general surgeon than of the syphilographer. Prevention of stricture is our province—not its cure.

Prevention may be accomplished to some extent in the following ways:—(1) By systematic subjective and objective examination of every syphilitic patient with regard to the involvement of his or her rectum. The patient should be warned what to look for, and at what period he should expect these manifestations. The use of the speculum where the finger is not educated, or where one feels any suspicious condition, is of the utmost value. (2) By examining every case with rectal ulceration with reference to specific taint. Within the past year I have had sent to me as cases of cancer three undoubted cases of syphilis of the rectum. Two of them, fortunately, have not reached the cicatricial stage of stricture, and are now comparatively well. (3) We should be careful and accurate in our diagnosis between simple traumatic, tubercular, and syphilitic ulcerations of the rectum. The history of the case may, or may not, be of value. Many cases of syphilitic ulceration of the rectum are cases of "syphilis innocentium," and unwittingly deceive us in our subjective examinations.

The presence of pain is no proof that an ulcer is not syphilitic. It is the location of the ulcer of the rectum which governs the pain rather than its nature. A syphilitic ulceration upon the muco-cutaneous border is just as painful as any form of ulcer, and a traumatic ulceration of the rectum above the external sphincter is just as free from pain as a syphilitic ulcer. The history of constipation, the use of enemata or other instrumental or digital manipulation of the rectum, would suggest a traumatic nature for the ulceration. Yet these conditions existing and producing the ulcer, if there be constitutional syphilitic taint, the ulcer, originally simple, may take on a syphilitic nature and progress as other syphilitic ulcerations. Chronic, advancing ulceration of the rectum, with cicatrising border at its earlier points, is almost .invariably syphilitic. Dry, brittle, mucous membrane about the anus, which cracks open by slight distention or upon the introduction of the finger, or pale pink, crenated, hypertrophied folds of the lower border of the mucous membrane are very likely to be associated with constitutional syphilis and frequently with ulceration higher up. The ulcers of the rectum which are likely to be confounded are the tubercular and syphilitic.

Treatment.—The constitutional treatment of these conditions does not differ from that of syphilis elsewhere. Mercury, however, should not be given internally in these conditions, as it is necessary to give the parts as much physiologic rest as possible. It should be used by hypodermic injections, inunctions, or sublimations. The iodides should be administered in the form the least irritable to the stomach. I have recently given it in a solution of pepsin, and this solution administered in milk. Another plan which has been suggested to me by Dr. Dillon Brown, of New York, consists in dissolving the iodide in milk, and making of this a rennet whey, the fluid part of which retains the iodide, and this is administered to the patient. It is a most unirritating solution, and seems to agree with the most delicate stomachs.

For local treatment, except in the gummatous form of ulceration, I do not believe in irritating or cauterising agents. Soothing and protective remedies have yielded the best results in my hands. Irrigation with boric acid or pyoktanin solutions, the application of slightly stimulating remedies, such as weak solutions of nitrate of silver, sulphate of copper, carbolic acid or bichloride of mercury, and the insufflation of iodoform, or, better still, aristol, upon the ulcerated points will generally cause them to heal and relieve the uncomfortable sensations of the patient. Recently I have obtained a very rapid healing in one case from the local application of a 10 per cent. solution of alumnol. Where this course of procedure does not result in cure we have one recourse, and that is absolute physiologic rest to the parts. This is given by inguinal colotomy : the formation of an artificial anus through which all the fæcal matter shall pass, and the continuation of our local treatment. If the ulceration heals following this procedure, and does not leave a dense, fibrous condition of the rectal wall, the artificial anus may be closed and the passage of the fæces restored to their normal channel. If there is a dense, cicatricial condition of the rectum left, then it would be wiser either to close the rectum permanently and let the patient bear the artificial anus through life, or to resect the strictured portion of the rectum, and bring the healthy portion of the gut down and attach it to the anus or that portion of the rectum which is not involved, above this orifice. In the localised gummatous form of rectal ulcers, scraping out of the diseased tissue with a sharp spoon, and then treating it as a simple ulcer, together with constitutional anti-syphilitic treatment, will generally result in a cure. These methods, applied with the early recognition of the disease, will save us the mortification of seeing so many incurable strictures of the rectum, and will avert a world of suffering to those who seek our aid, but beyond and above all methods of treatment is the importance of early recognition in these cases.—*Journal of the American Medical Association, February* 1, 1896.

ORGANS OF URINE AND GENERATION.

74.—THE TREATMENT OF ACUTE URETHRITIS IN THE MALE.

By H. M. CHRISTIAN, M.D.,
Chief of Genito-Urinary Dispensary, University of Pennsylvania.

[The following is taken from Dr. Christian's paper :]

The mere absence of discharge at the meatus by no means proves the correctness of the cure of gonorrhœa. There may be present a posterior urethritis, the pus from which, prevented by the action of the "compressor urethræ" from entering the anterior urethra, would enter the bladder and become mixed with the urine. Under such conditions no discharge whatever would appear at the meatus. The key to this most important question of determining when a case of acute urethritis is cured lies in the examination of the urine.

The patient should be instructed at the outset of his treatment that he is not to consider himself as cured until a number of examinations of his urine have been made after the cessation of all local treatment. If repeated examinations of the morning urine and the urine passed at the time of the patient's visit show an absence of shreds containing pus, which fall rapidly to the bottom of the glass, we can feel reasonably sure that the case is almost well. If, on the other hand, clap shreds are found in either a clear or cloudy urine, the case is not cured, and further treatment must be pursued.

Another method of determining this question—much more scientific and exact—is the application to the urethra of a test irritating injection, either of bichloride of mercury or nitrate of silver. There results, of course, a simple urethritis, the pus from which is examined. If found to contain no gonococci, the case can be pronounced positively cured. If, on the other hand, gonococci should be found in the discharge produced in this way, it is proof that the original specific urethritis has not been cured. The one great objection to this highly scientific method is its impractibility. However, to married men, or to men about to be married, I would say that the matter should be explained to them, and the test irritating injection should by all means be employed.

In the treatment of acute urethritis four methods are presented for consideration :—*First*, treatment by internal medication alone, no local treatment being used. This is a method still employed by quite a number of physicians, and is the one most popular with prescribing druggists. The remedies most commonly used are cubebs, copaiba, and sandalwood oil. A very nauseous mixture popular in certain localities is the celebrated "Lafayette mixture," the principal ingredient of which is copaiba made into an emulsion by the addition of liquor potassæ. Some four years ago, at the suggestion of Dr. Edward Martin, I conducted a series of experiments at the Genito-Urinary Dispensary of the University, on the treatment of urethritis by internal medication alone. The drugs used in these experiments were salol, copaiba, cubebs, and oil of sandalwood. Each drug was employed, to the exclusion of all other treatment, in twenty-five cases of acute urethritis, making the total number of cases treated one hundred. The inference would seem to be very plainly drawn that internal medication alone will not cure the disease.

The *second* plan mentioned is the one most widely employed by the medical profession to-day in the treatment of acute urethritis. In the main it consists in the administration of some alkaline diuretic or fever mixture in the early stage of the disease, followed by the use of some injection during the stationary period, together with the internal use of some one of the balsams. In the subsiding stage strong astringent injections are employed. The drugs most generally used, and on the whole most valuable in the beginning, when the ardor urinæ is a most prominent and troublesome symptom, are bicarbonate of sodium, bicarbonate of potassium, citrate of potassium, and acetate of potassium. Of these, I consider the acetate of potassium the best. The use of Buffalo lithia water is of great service in keeping the urine alkaline. No local treatment is employed during the first week of the disease. At the end of this period, when the ardor urinæ is almost entirely gone and the discharge becomes very profuse, the patient is ordered an injection. Of the host of drugs mentioned as useful at this stage of the disease, two stand out prominently as the most valuable of all—namely, subcarbonate of bismuth and hydrastis. The formula which has been in use at the Genito-Urinary Dispensary of the University for the past ten years, and has stood the test of time better than any other, is as follows :—℞ bismuth subcarb., ʒii ; liquid hydrastis (colourless), f℥ss ; boro-glyceride, fʒii ; aq. dest., q. s. ad ℥iv. This injection is used by the patient three or four times daily after urinating. In addition he is given internally a capsule containing 5 drops each of the oil of sandal-wood and balsam of copaiba. From six to eight of these are given daily. Under this treatment the discharge will in about one week become very scanty and much thinner. At this stage sulphate of zinc (2 to 3 grains to 1 ounce) can be added to the above injection. In the declining stage of the disease one of two formulas is to be very strongly recommended—the injection of Ricord, consisting of sulphate of zinc, acetate of lead, tincture of opium, tincture of catechu and water ; or an injection composed of sulphate of zinc, acetate of lead, hydrastis, and water. In the final stage of the disease, when there is no longer any ardor urinæ or chordee, and simply a thin mucoid discharge, due to a relaxed condition of the urethral mucous membrane, an injection containing alum and sulphate of zinc, or alum and tannic acid, each 5 grains to 1 ounce, is probably all that is necessary to effect a cure. Finger speaks very highly of ichthyol. I must say that I have been very much disappointed in the use of this remedy, having found it much inferior to subcarbonate of bismuth. Neisser strongly advises injections of nitrate of silver (1 grain to 6 ounces of water). Dr. J. William White employs an injection containing sulphate of zinc, boracic acid, peroxide of hydrogen, and water. After all, it is often not so much the drug or drugs that are employed as it is the care taken in the details attending their use that so often cures. In 150 cases treated according to the method just considered, epididymitis ocurred in 13. Patients were pronounced cured in from five to six weeks.

The *third* method of treatment is that by irrigation of the urethra, no internal treatment being employed and no injections used by the patients. To employ irrigation of the urethra, all that is necessary is an ordinary fountain syringe, raised four to six feet above the patient's waist, and a soft-rubber catheter, No. 14 or 16 calibre, which is slipped over the small nozzle of the syringe. The catheter is slowly passed down to the bulb and as slowly withdrawn, allowing the solution to flow continuously along its side out of the meatus into a basin held by the patient. Very thorough irrigation of the urethra is accomplished in this manner. One quart of a warm solution should be used, and the irrigation should be employed daily for two weeks. For this purpose three drugs have been used—bichloride of mercury (1 to 20,000), nitrate of silver (1 to 6,000, increasing to 1 to 2,000), and permanganate of potassium (1 to 4,000, increasing to 1 to 1,000). In a series of experiments recently carried on at the University Dispensary 60 cases of acute urethritis were treated by irrigation of the urethra, no other treatment being used. Of these 60 cases, seven were cases of non-specific urethritis. Of the 53 cases of specific urethritis, three were cured in three weeks, 31 were very much improved, and ardor urinæ and chordee were quickly relieved in all. Epididymitis occurred in only one instance. Of the remedies used, permanganate of potassium proved to be far in advance of the others in efficacy. The three cases of specific urethritis cured were treated by this drug, and four cases of non-specific urethritis were cured by its use in 14 days. Bichloride of mercury was found to be of the least value, by reason of the fact that those solutions strong enough to have any effect on the gonococcus were found to be very irritating to the mucous membrane of the urethra, causing considerable pain. At the end of two weeks' treatment there still remained a thin mucoid discharge, containing gonococci in small numbers, in 49 cases. These were all finally cured by the use of some astringent hand injection. The advantages of irrigation are:—(1) A more thorough flushing of the entire urethra; (2) a marked lessening of ardor urinæ and chordee; (3) the small proportion of cases of epididymitis resulting, as compared with other methods of treatment; (4) the very rapid diminution in the quantity of the discharge. Two great disadvantages that will confront the general practitioner who undertakes to treat gonorrhœa by irrigation are its novelty and the attendant trouble and expense.

The *fourth* plan of treating acute urethritis may be said to be a combination of the three preceding, and, where it can be properly carried out, seems to be superior to all. It consists in the daily irrigation of the urethra for two weeks with solutions of potassii permanganate (1 to 4,000, increasing to 1 to 1,000). In addition, the patient takes inwardly a capsule containing 5 drops each of oil of sandal-wood and balsam of copaiba, six or eight being taken daily. At the end of two weeks' treatment an astringent injection containing ℞ zinc sulph., gr. xii; plumbi acetat., gr. xv; hydrastis, ʒss; aq. dest., q. s. ad ℥iv, is ordered to be used three or four times daily. Under this line of treatment the majority of the cases will probably be cured in about five weeks. This is the method adopted at the University Dispensary for some time past, with the very best results.

Conclusions.—(1) That certain drugs have a very positive effect in lessening the amount of urethral discharge. (2) That sandal-wood oil and balsam of copaiba are the two drugs to use for this purpose. (3) That they can properly be given in the early stages of the disease and continued throughout its course. (4) That internal medication alone will not cure gonorrhœa. (5) That the most valuable drugs to be used as hand injections by the patient are subcarbonate of bismuth, hydrastis, sulphate of zinc, acetate of lead, nitrate of silver, and tannic acid. (6) That daily irrigation of the urethra is a distinct advance in the treatment of acute urethritis. (7) That irrigation alone cannot be depended upon to cure the disease. (8) That daily irrigations of the urethra with solutions of potassium permanganate for two weeks, together with the internal administration of sandal-wood oil and copaiba, followed at the end of this period by the use three or four times daily of a hand injection containing sulphate of zinc, acetate of lead, and hydrastis, comprises the best method of treatment and furnishes the best results. (9) That simple non-infectious urethritis can be cured in ten days or two weeks by daily irrigations of potassium permanganate or nitrate of silver.—*Therapeutic Gazette, September* 15, 1895.

75.—URETHRITIS OF NON-GONORRHŒAL ORIGIN.

By M. P. Faitout.

[The following is Mr. Montgomery's abstract in the *Medical Chronicle*, March, 1896, of M. Faitout's paper.]

For some years after the discovery by Neisser in 1879 of the gonococcus, nearly all cases of urethritis were ascribed to its influence. The reaction was begun by Aubert in 1885, and the author has embodied in the present paper a large amount of the literature of the subject published in the last ten years. He makes the following classification of the so-called simple urethritis :—Due to external causes—Traumatic, venereal. Due to internal causes—Rheumatism and gout, tubercle, syphilis, plumbism, acute fevers, drugs. An almost infinite variety of micro-organisms have been found in the discharge from these cases. The most common are the m. pyogenes albus and aureus, the m. subflavus, the orange bacillus of the urethra, and the ubiquitous bacterium coli commune.

The forms of traumatism usually responsible for simple urethritis are :—Catheterism, especially where the catheter is left some days in position, and irritating injections. Injections of nitrate of silver, so frequently used at one time in the abortive treatment of a supposed gonorrhœa, often produce a urethritis lasting for some days, no trace of the gonococcus being found in the discharge. Masturbation is given as an occasional cause, and prolonged bicycle exercise with an ill-fitting saddle may, now-a-days, be found a sufficient excuse.

Under the head of venereal causation, the author includes those frequent cases of urethritis acquired by contact with women during the menstrual period, or while suffering from leucorrhœa. Bockart recorded 12 cases observed during a period of four years. The latent period was from two to three days, and the discharge lasted, on the average, for about a week. Two of the cases were followed by epididymitis. The organisms found in the discharge were diplococci, in groups of from two to six, much smaller than the gonorrhœal coccus. The inflammation was nearly always found confined to the region of the fossa navicularis.

That urethritis is common in gout, and repeated at each attack, most surgeons are agreed ; cases occurring in the course of acute rheumatism are much more rare. Still daily examinations have failed to show the existence of any gonococci. The theory that the utheritis is due to the passage of the strongly acid and irritating urine, and not to a gouty or rheumatic inflammation of the mucous membrane itself, is generally accepted.

Tubercular urethritis undoubtedly exists, usually, however, confined to the prostatic urethra, and associated with disease of the epididymis and vesiculæ. Koch's bacillus has been found in the discharge, and a similar urethritis induced in animals by inoculation. A syphilitic form is described accompanying the eruptions of the secondary stage. In a few cases urethral discharge has been noticed during the course of typhoid fever, especially in early convalescence. The organism found is most often the m. pyogenes aureus. The typhoid bacillus itself has not been detected. Among the drugs which cause urethritis may be mentioned especially cantharides, turpentine, arsenical preparations and the salts of potash; pepper and asparagus also contain principles with a similar action.

In conclusion, simple urethritis produced by any of the above causes is distinguished from the gonorrhœal form by the following characteristics:—(1) The latent period is short, on the average two to three days, instead of the four to five days incubation usually observed in gonorrhœa. (2) The symptoms are of much milder type; inflammation is less and painful erections rare. (3) The complications of epididymitis, orchitis, cystitis, and secondary kidney troubles, are extremely rarely observed. (4) The duration of the attack is short, but slight relapses are frequent.—*Gaz. d. Hôp, January* 25, 1896.

76.—CASTRATION IN ENLARGED PROSTATE.

By C. W. Mansell Moullin, M.D.,Oxon., F.R.C.S.Eng.,
Surgeon to the London Hospital, &c., &c.

[Abstract of paper read before the Harveian Society,
February 6, 1896.]

The author stated that, while it was quite true that a large number, the majority, in fact, of old men who suffered from this complaint were enabled to lead fairly comfortable lives by passing catheters from time to time, and when cystitis set in washing out the bladder; it was equally true that many went on steadily from bad to worse, and died at last after prolonged suffering from septic absorption and inflammation of the kidneys. Drainage of the bladder in such cases is only a palliative. The formation of an artificial urethra, either supra-pubic or in the perineum, is very little better, as the patient has to wear a portable urinal; and prostatectomy is a very serious operation, not so much from the operation itself as from its being done when it is too late, in a foul and septic bladder. Orchotomy, on the other hand, offers a chance of complete and permanent relief, with but little risk to life. In support of this Mr. Mansell Moullin mentioned the conclusions at which he had arrived from the twelve cases in which he had been consulted, or on which he had operated himself. Two, both under his own care, had died; one, nine days after the operation, from fatty degeneration of the heart, the other, five days after, from rupture of the left middle cerebral artery. Two others had also died but not for six months. One of these was 82 years of age, the other was 80; and they both had experienced great relief. Two more had suffered from a very severe attack of traumatic delirium, coming on shortly after the operation and causing the greatest anxiety. They both recovered and were well at the present time. There was no evidence either that this delirium, or that the mania which had been recorded as having followed this operation was in any way different from the traumatic delirium that not unfrequently occurs in old people after severe injuries, and may even follow the administration of an anæsthetic. As it had occurred twice after the removal of only one testicle, it could not be due to the loss of any specific power exerted by the testicles, or if any substance formed by them and excreted into the circulation. Therefore, it was not to be treated by the injection of testiculin or orchitic extract. In all the twelve cases, including that of the patient who died upon the fifth day, there was a distinct diminution in the obstruction; and although this might, so far as the early days were concerned, be explained by vascular changes, the reduction in the size of the prostate, as measured both by rectal and urethral examination, was far too complete to be accounted for in this way. In some the prostate completely disappeared. Nor was this the result of the palliative measures that were adopted at the same time; for, wherever it was practicable, these had had a thorough trial by themselves first. In one case, that of a patient 80 years of age, the diminution in size, when measured by the finger in the rectum was not very great and voluntary control was not regained. But as a soft catheter passed easily, whereas before only a metal one or a bicoudée could be used, and that with difficulty, and as the strangury, which had resisted all previous treatment, entirely disappeared, Mr. Mansell Moullin thought the case could not be considered a failure. It was never suggested that removing an obstruction at the neck of the bladder would be able to regenerate the muscular coat, if this had been destroyed by catheterism and previous cystitis. In another case the inflammation of the bladder persisted, but this again was not the fault of the operation, for the walls contained numerous sacculi, which could not be kept empty. Mr. Mansell Moullin also mentioned one case, under the care of Mr. Manning, of Salisbury, in which unilateral orchotomy had proved a very great success; and discussed the question as to the probability of section of the vasa deferentia being followed by as good a result as removal of the testes.—*Medical Press and Circular, February* 19, 1896.

77.—RECENT CONTRIBUTIONS TO RENAL SURGERY.

[The following is a leading article appearing in the *Boston Medical and Surgical Journal* of January 16, 1896 :]

The conservative surgery of the kidney is a subject which has of late begun to attract an attention in the surgical world proportionate to its importance. Fenger recently called the attention of the Philadelphia Academy of Medicine to the advantages of lumbar incision in hydronephrosis, and subsequent operation for the removal of the valve formation in the ureter which had caused the hydronephrosis. By this means the lumbar fistula was made to heal, and complete cure attained. He also reported a successful operation for valve formation between the sacs of a sacculated kidney. By division of the walls between the sacs a single sac was produced, communicating freely with the pelvis of the kidney. He also reported a case illustrative of the value of resection of the diseased portion of a kidney instead of nephrectomy in a case of tuberculosis limited to the lower third.

Our statistics with regard to renal surgery have been recently enriched by Hildebrand, who, in a recent number of the *Deutsche Zeitsch. f. Chir.*, gives the result of operations practised for divers affections of the kidney at König's clinic at Gottengen.

Thirteen cases are reported of nephrectomy for tumours—seven in children of from one to seven years of age, and six in adults past the age of forty years. Of the seven children, none had hæmaturia, and, apart from some emaciation, all were in excellent condition. In all these seven the tumour occupied the right kidney. No diagnosis had been previously made of the histological form of the tumour. Ablation was made through the peritoneum, that is, by the abdominal method, and was performed in most cases without a great deal of difficulty.

In one case the tumour had invaded the large blood-vessels, and in another the mesenteric glands, and the removal was consequently incomplete. In one case the laparotomy revealed a soft sarcoma; a severe hemorrhage necessitated tamponnement of the cavity. Only one of these children succumbed to the operation ; all the rest after three or four weeks left the hospital well. Five of these tumours were sarcomata, the sixth a congenital cyst complicated with sarcoma, and the last a carcinoma. The six patients who survived the operation afterwards succumbed to a return of the disease or to metastases (in from two months and a half to a year).

The six adult patients had all suffered from hæmaturia for several months or several years before the operation. No exact diagnosis was made of the nature of the renal tumour.

Extirpation was effected in all the cases but one by the lumbar way. In several subjects the operation was very difficult by reason of adhesions and hemorrhage. In three cases the tumour adhered to the liver, and in another to the vena cava. In one of the subjects the operation was abandoned on account of both kidneys being found affected with cystic degeneration. Of the tumours removed, three were found to be angio-sarcomata, one a sarcoma, and one was a carcinoma. Two patients succumbed a short time after the operation. The patient with cystic degeneration of both kidneys died of uræmia in five days; of the three others, two succumbed at the end of several months, and one only, a woman, from whom an angio-sarcoma was taken, remained in perfect health at the end of twenty months.

The results of these operations thus proved to be as bad for the adults as for the children; evidently the extirpation of the kidney in cases of malignant tumour has little chance of success unless practised early, as soon as the diagnosis can be made with sufficient certainty.

A case of fibro-myo-osteo-sarcoma of the capsule of the right kidney is reported; the patient was a man aged thirty years. The tumour, which had been mistaken for a floating kidney, filled the whole right side of the abdomen, and was soft in places with other adjoining parts that were hard. There was no hæmaturia. This morbid growth was easily removed by median laparotomy. The tumour had developed between the intact kidney and the suprarenal capsule. The patient got well in six weeks. He was seen a year afterwards, and was in good health.

There is a very interesting case of a perinephritic blood cyst in a girl nineteen years of age. The cyst could easily be felt under the left lower ribs as a firm, elastic globular tumour. There was no hæmaturia, and it was impossible to decide whether the tumour was connected with the kidney or spleen. It was brought to view by a retro-peritoneal section, and proved to be an enormous sac from which a litre-and-a-half of fluid blood was evacuated with some clots. The internal wall had the aspect of a mucous surface; the cyst had developed outside the intact kidney. The margins of the opening were sutured to the external wound. The patient, who had previously been in a miserable state of health and bed-ridden, got well in a little less than three months. Histological examination proved the cyst to be a simple hæmatoma; the internal wall of the sac had no epithelial lining. This hæmatoma was supposed to be the consequence of the rupture of an aneurism. The patient was perfectly well at the end of twenty-seven months. There was one case of echinococcus of the left kidney which had been diagnosticated as sarcoma in a little girl of five years. The child succumbed the day after the operation. There were four cases of hydronephrosis and eight of pyonephrosis treated either by incision or nephrectomy ; two deaths.

In three cases of tuberculosis of the kidney with concomitant vesical catarrh, extirpation of the diseased kidney was followed by complete recovery. These patients were all in good health after the expiration of several years. These were regarded as cases of primary tuberculosis of the kidney.

In two other cases there was tuberculosis of the kidney and extensive tuberculosis of the bladder ; here the renal disease was supposed to have originated in and extended from the bladder ; these patients succumbed during or shortly after the operation. It is observed that renal tuberculosis may long remain latent, while tuberculosis of the bladder soon manifests itself by the symptoms of cystitis. When there is concomitant renal and vesical tuberculosis it is not always easy to tell in which organ the disease occurred primarily. According to König, renal tuberculosis is in many cases of arterial origin and not consecutive to a tuberculous affection of the bladder or of the male genital organs.

Of eight patients on whom nephrectomy was performed for tuberculosis of the kidney, four got well and have remained well for several years. The four that died lived a variable time, from twenty-four hours to six weeks ; on three of these an autopsy was obtained and in one the other kidney was found to be absolutely free from tuberculosis. These facts as well as those of Tuffier and Steinthal prove the frequency of unilaterality of the lesions, and fully justify surgical interference in renal tuberculosis.

Nephropexy for mobile kidney was practised in twelve cases (eleven being on the right side) ; no death. The operation was successful in all the cases but one, a young, hysterical female. A laparotomy practised subsequently for other reasons showed that the kidney remained fixed in its normal place. Of the eleven other patients six were cured completely and permanently. The fixation of the kidney is made by means of four sutures, two being of silk and two of catgut. The threads are passed in deeply through the renal substances with a distance of three or four centimetres between the points of entrance and the exit.

78.—CALCULOUS ANURIA.

[This is a leading article on this important subject taken from the *Therapeutic Gazette*, March 16, 1896 :]

Given a case of complete suppression of urine due to a kidney calculus obstructing the ureter, the necessity for surgical intervention is to-day universally conceded. Though on this one point there is a practical unanimity of opinion, widely divergent views are still held regarding the cause of suppression, the symptoms and signs denoting that calculus is a cause of such suppression, the method of determining the kidney affected, the time for intervention, and finally the particular form which intervention shall take.

Seguen (*Annales des Mal. des Org. Genito-Urin.*, 13 An., No. 10), in reporting four cases of calculous anuria treated by operation, with successful issue twice, regrets that failure on the part of surgeons to publish their fatal cases deprives the student of an opportunity of definitely settling many of the disputed points. He classifies anuria as reflex, toxic, and mechanical.

Reflex anuria is that observed when a healthy kidney fails to secrete as a result of nervous influence, as for instance the suppression following a severe abdominal operation, or the almost complete suppression commonly observed in renal colic. As a result of closer clinical study, the number of cases of reflex anuria is daily diminishing—and it is worthy of note that nearly every case of complete suppression, even though there exist an apparently sufficient reflex cause, will show more or less disorganised kidneys.

Toxic anuria is that of nephritis ; whatever be the cause, the ultimate result is destruction of the secreting substance, hence the anuria.

Mechanical anuria is that due to obstruction of the ureters, whether it be from pressure of tumours from without, from twisting, kinking, or stricture, or from lodgment of a calculus. Seguen holds that calculous anuria is absolutely mechanical, and is observed only in those who had but one functional kidney. This is shown by the results of autopsies and by clinical experience. The suppression of function on the part of the other kidney is not a reflex resulting from calculous obstruction of the involved ureter, but is a long-standing pre-existing condition, hence the hopelessness of waiting for this imagined reflex to cease from being operative. The anuria will continue as long as the channel from the remaining healthy kidney is completely obstructed. As a result of sudden increase of pressure in the pelvis of the kidney, this organ ceases to secrete. This failure to secrete is not due to a ureteral reflex, but is solely due to tension.

It is true that when the kidney has become much disorganised, as in long-standing lithemia, there may be anuria associated with calculi which have not been obstructive. Such cases are classed as toxic rather than calculous, and are not benefited by operation. One such case resulting fatally is reported. The diagnosis may be impossible, but since these cases are much rarer than calculous anuria, when there is good reason to suspect the latter an operation should be performed.

Reflex anuria associated with blood in the bladder may also be impossible to distinguish from calculous anuria.

The anuria of surgical nephritis is preceded by a long-standing polyuria, gives rise to no renal pain, and causes rapid development of uræmia. Locally, there is neither hæmaturia nor contracture of the abdominal muscles.

The kidney in calculous anuria is congested but not materially enlarged, hence can be felt with difficulty if at all ; the diagnosis is founded on sudden suppression of urine, either with pain or without, and the drawing of blood from the bladder by catheter, or the passing of it spontaneously. The determination of the side affected may be extremely difficult in the absence of distinct kidney enlargement and a clear history as to pain ; this is decided by local tenderness in the kidney region, by resistance of the abdominal muscles of the affected side to deep pressure, or by ureteral tenderness elicited by rectal examination. The seat of obstruction is still more difficult to determine ; a study of cases shows, however, that in two-thirds of all cases the calculus is arrested at the kidney orifice of the ureter or within a short distance of this. It is possible that severe persistent pain, of long-standing, would point to partial descent of the stone, since pain practically ceases when the latter is arrested.

As to the time for operation, this should be performed immediately when a diagnosis has been established with reasonable certainty, because the condition present not only threatens life directly and immediately, but progressively brings about disorganising changes in the kidney which when well advanced cannot be repaired even though the kidney obstruction be removed. Indeed, the operative successes have been proportionate to the promptness with which nephrotomy was performed. Seguen has collected 25 cases of calculous anuria in which operation was performed ; 10 died. Taking only the cases operated on in the first five days of suppression, the mortality was reduced about one-half. As to the choice of operation, nephrotomy is greatly superior to pyelotomy or ureterotomy (the position of the stone not having been definitely determined), because it lessens the kidney congestion by bleeding, allows of thorough exploration and clearing-out of the pelvis, and facilitates retrograde catheterism of the ureter ; this should always be done after removal of the most obvious obstruction, a stone in the ureter being either pushed up or cut upon and removed, with subsequent ureteral suture.

In opening the kidney in these cases it should first be thoroughly freed and delivered into the wound, so that its vessels can be seized between the thumb and finger; an incision is then made into the convex border, going through the kidney substance and freely opening the pelvis. Calculi—there are usually many—are removed with the finger, scoop, and fountain syringe. If the ureter is permeable as far as the bladder, the kidney wound is sutured with fine catgut, the organ is sewed in place as in the case of floating kidney, and the parietal wound drained and closed. If the ureter is not surely patulous, a drainage-tube is passed into the kidney pelvis, and thus a lumbar fistula is formed.

79.—THE OPERATIVE TREATMENT OF MOVABLE KIDNEY.

By James Bell, M.D., Surgeon to the Royal Victoria Hospital, &c., &c.

A movable kidney which gives rise to no symptoms requires no treatment, and I do not doubt but that the discovery of this condition to the patient's knowledge is often one of the greatest misfortunes to her or to him, and is frequently the cause of a train of subjective symptoms which will probably never be entirely removed by operative or any other treatment. My own personal views upon this subject may be expresssd in the following statements:—(1) That preternatural mobility of the kidney often produces, *per se*, many very troublesome symptoms which are quite frequently sufficient to incapacitate the patient. (2) That such undue mobility often leads to organic changes in the organ. (3) That fixation of the kidney under these circumstances is the only rational treatment. (4) That in the great majority of cases (which require treatment), this can only be done by operative measures. (I cannot conceive that it is possible to fix the kidney by any kind of belt or truss, or appliance, without producing injurious pressure upon the intra-abdominal organs, and, as a matter of fact, I have been unable to satisfy myself that it is possible to retain a movable kidney in its proper position by any kind of appliance, even at the expense of injurious pressure upon other organs.) (5) That a carefully performed nephrorrhaphy should practically always succeed in permanently fixing the organ. (6) That nephrectomy for undue mobility of the kidney can hardly ever be necessary. [The details of the five cases recorded to illustrate the above statements have been omitted here.]

I shall not attempt to discuss the questions of causation, diagnosis, influence of sex, age or occupation, nor even the selection of cases for operation, except to say, that whenever the symptoms are sufficiently distressing to cause invalidism, operation should be recommended. In this connection, I wish to emphasise the statement already made that excessive mobility of the kidney when of long duration, in at least a certain number of cases (probably much larger than has hitherto been suspected), leads to destructive changes in the organ. As to the operation itself, the kidney is exposed in the loin, preferably by an oblique incision extending downwards and forwards from the outer border of the erector spinæ muscle parallel to the twelfth rib and a finger's breadth below it (Treves' operative surgery). In the earlier operations the fatty capsule was sutured to the parietes and there were many relapses. The next step was to separate the fatty capsule from the kidney and pass the sutures through the fibrous capsule, but it was soon discovered that the capsule stripped off very readily. Then advancing a step further the suture was passed into the kidney tissue, including both parenchyma and capsule. Experience soon showed that no apparent injury was done to the kidney and a much more secure approximation was effected which gave better permanent results. Other methods employed have been to abrade the fibrous capsule or to partially remove it in order to approximate a raw surface to the transversalis fascia; to pass the suture around the last rib or through its periosteum, &c. Generally speaking, however, the method employed at the present day is to pass three to four or five sutures through the fibrous capsule and kidney tissue for the space of three-quarters of an inch in length and a quarter of an inch to half an inch in depth and attach them to the cut edges of the transversalis fascia and oblique muscles. There is probably no better arrangement of the sutures possible than that recommended by Mr. Morris—to pass a suture from each edge of the wound near the convex border of the kidney (including muscle, fascia, capsule and kidney tissue) and a third nearer to the hilum, this latter to include both edges of the wound as well as capsule and kidney tissue. For suture material catgut has been pretty generally abandoned. Silk is open to the same objection in this as in other operations—that is, that occasionally a sinus forms and persists until the suture is removed. Animal tendon has been employed, and silk-worm gut has of late been used perhaps more frequently than any other material. It seems to be free from objection and answers every purpose. In the *Revue Médicale*, No. 6, June, 1895, is described a new operation for the fixation of floating kidney by Vulliet and Poullet. It is described as fixation by living tendon and consists in suture through the capsule by a detached tendon of the dorsalis longus muscle. (I can only say of this procedure that it seems to me at first sight to be an unnecessarily complicated one.) It is probably better in most cases to allow the wound in the parietes to heal by granulation, both to avoid the risk of cellulitis and to secure a firmer adhesion in the line of the wound. This does not involve any considerable delay in healing, as the wound contracts and closes with amazing rapidity. The anatomical distinction between floating kidney, which is surrounded by peritoneum, has a distinct mesonephron and is congenital; and movable kidney, which is retroperitoneal, has no mesonephron and is generally acquired, is of no practical importance surgically and probably could rarely, if ever, be made out during the performance of an ordinary operation for fixation of the kidney.—*Montreal Medical Journal, November*, 1895.

AFFECTIONS OF THE EYE AND EAR.

80.—FORMIC ALDEHYDE IN OPHTHALMIC PRACTICE.

By James Mackenzie Davidson, M.B., C.M., Surgeon to the Aberdeen Ophthalmic Institution, &c.

The results I have obtained with this substance in the treatment of some diseases of the eye have been so notable that I am induced to publish this short article upon its use. The preparation I am using is Schering's formalin (which consists of 40 per cent. formic aldehyde in water forming a stable solution if kept in a well-corked bottle). One part of formalin in 2,000 or 3,000 of water is the strength of the solution which I find most serviceable. When I tried it first in hypopyon ulcers it was dropped into the affected eye three or four times daily, and it seemed to be of very little use, but on applying it freely every hour I have never seen anything act so effectually in these cases.

Everyone engaged in ophthalmic work in a manufacturing town knows how numerous and troublesome, and indeed often disastrous, are the cases of septic abrasions of the cornea ending in hypopyon ulcers. The granite and engineering works in Aberdeen give us ample experience in these kind of cases. The usual antiseptic applications so often fail to benefit such injuries that recourse has to be had to the electric cautery, and if this is to be thoroughly effectual the focus must be burned out completely, and consequently more or less of sound corneal tissue is destroyed as well, and, while the scar left is frequently wonderfully slight, still no one can doubt that if the process can be at once arrested by local antiseptic applications the results are even better.

My experience warrants me in claiming that in a solution of formalin, 1 in 2,000 or 1 in 3,000, applied every hour freely we have such a substance, and it would be of interest to know if others come to the same conclusion. Used in the same way or less frequently as experience may dictate, it acts admirably in abrasions of the cornea which have become septic and infiltrated, and might or might not go on to suppuration. Another great advantage is that the severe pain so characteristic of hypopyon ulcer is speedily relieved by the formalin solution, which, further is non-poisonous and produces no irritation in the strength recommended. The directions I give to the patient are to lie down, and then with a dropper, or failing that a teaspoon, the formalin solution is poured gradually into his eye, while the eyelids are kept winking, so that its surface will be freely bathed ; this being done hourly during the day, and at night also should the patient happen to awake.

As instances of its use I may cite my last four cases treated as out-patients at the Aberdeen Ophthalmic Institution :—(1) A case of corneal abrasion suppurating with a hazy infiltration of cornea downwards. Hypopyon about one-eighth of an inch, great pain and sleepless night. Formalin solution (1 in 2,000) ordered to be applied freely every hour. A drop of atropine solution applied (4 grs. to ℥j). Next day (twenty-four hours after) hypopyon gone, no pain during night, slept well, ulcer cleaner, and haze of cornea disappearing. The progress in this case was most satisfactory, with the exception of a slight relapse, owing to the formalin being used every two hours instead of hourly ; however, when the more frequent application was resumed, the recovery was uninterrupted and only a slight scar remaining. (2) A young man who received a "stroke" on his left eye four days before he came to the Ophthalmic Institution, having had no previous treatment. The condition was a wound of the cornea below in which the iris was entangled, infiltration of adjacent parts of cornea—hypopyon and iritis. Formalin (1 in 2,000) was prescribed to be used every hour, also atropine drops (4 grs. to ℥j), a drop thrice daily. Next day hypopyon gone, wound clearer, iris well dilated, posterior synechiæ having given way ; no pain. This improvement has been maintained ; the case is too recent to say more at present. (3) a case of dense grey ulcer, with infiltration. Eye very irritable ; fellow workman had picked off a "fire" with a pin. A drop of atropine applied, and hourly applications of formalin ordered. Within twenty-four hours the infiltration had entirely disappeared. No pain; the eye looks quiet. (4) Corneal ulcers of left eye in a child with pustulous eczema of lids and face, with great photophobia and lid spasm. The mother was directed to soak the parts with formalin (1 in 2,000), to try to get a few drops between the eyelids hourly, and to remove all crusts. Next day the skin was clean and healing, and there was no photophobia or lid spasm.

One is always afraid in advocating the use of a comparatively new drug that one's judgment may insensibly become unduly biassed in its favour if it acts at all well, but I have used formalin now for some months, and have had the opportunity of having the opinion of fresh and impartial observers familiar with the usual methods of treatment and results, and without exception a most favourable opinion has been formed of its value, especially in septic abrasions and hypopyon ulcers, provided it be applied freely and frequently, not less than hourly in severe cases. Atropine is only used sufficiently to keep the pupils dilated in these cases. Since using formalin in this way I have not had to use the electric cautery once. Of course there are cases in broken-down subjects, and those that are too late in seeking advice, where suppuration of the cornea may not be arrested by any means, but I consider that formalin should have a fair trial, even in such, and supplement operative treatment.—*British Medical Journal, January* 18, 1896 *p.* 144.

81.—PURULENT OPHTHALMIA.

By Dudley S. Reynolds, A.M., M.D.,
Professor of Ophthalmology, &c., in the Louisville City Hospital, &c.

Purulent conjunctivitis should have a degree of significance to the physician according to the character of the infection and the age of the patient. While there are many varying degrees of intensity, for clinical purposes, it is best to recognise but two causes: the gonorrhœal and the endemic.

The gonorrhœal is most malignant and intractable; it seldom occurs in both eyes simultaneously. It is most common in adults, and is the result of contagion. The endemic is equally contagious and differs in its clinical features from the gonorrhœal type in degree of severity and extent of invasion. In gonorrhœal inflammation, the cocci not only attacks the mucous corpuscles and surface epithelium, but penetrate quickly into the mucous follicles, which become greatly distended, causing such interruption in the circulation of the blood in the capillary coils surrounding the follicles that great œdema is quickly set up, producing a degree of swelling of the ocular conjunctiva often quite sufficient to very nearly overlap the entire cornea, giving to its vertex a decidedly umbilicated appearance.

These phenomena are never seen in the endemic form, which depends upon the presence of one or the other of two varieties of staphylococci. The disease in its earliest stages presents a golden yellow coloured pus, or a cream coloured stringy muco-pus. In the gonorrhœal infection there are always extensive abrasions of the surface in the lining of the lids. In the endemic type this never occurs, and while there are in reality two distinct forms of staphylococci which produce purulent conjunctivitis, one of them stringy, the other golden yellow, there is little difference in degree of severity and in the clinical course of the inflammation. In the new-born the endemic is the most common type of purulent inflammation, and it is vastly more dangerous to the cornea than in adults. It is extremely doubtful if any case of gonorrhœal conjunctivitis ever resulted from maternal infection in the course of natural delivery.

[The author then gives his reasons for this opinion, and strongly advises against Credé's method of prophylaxis by instilling 2 per cent. silver nitrate, as infection may be conveyed to the infant's eyes in this way.]

As to the treatment of the varying forms and stages of purulent conjunctivitis, it seems to me necessary that something should be said. It has been too long the custom to seek chemic antidotes for specific types of inflammation, and to regard all the purulent forms of conjunctivitis as the old-fashioned doctors did similar processes in the male urethra. It was long the custom to treat such cases with active caustic applications, and powerful astringents. Experience must have convinced any ordinary observer that these methods of practice are not only dangerous, but rarely curative. The most successful treatment of gonorrhœa in the male is through the medium of the circulation, and not by local injections; and where these are practiced in the advanced stages they are of a far milder character than were formerly employed. The same rule applies to the treatment of gonorrhœal inflammation in all mucous membranes, whether it be the conjunctiva, the vagina, or the urethra. The object being to keep accumulating matters constantly washed away, and to so sterilise the surfaces as to retard the activity of the growth of the ferment, and, in this way, the earlier stages of the disease are held in such control as to prevent deep seated invasion, and consequent necrosis of the cornea. In the more advanced stages of the infection such stimulating agents as do not impair the vitality of the young epithelial cells may be employed. Astringents, are, however, never to be used here. In the first stages of gonorrhœal infection, bichloride of mercury in the proportion of one-sixteenth of a grain to the ounce of water containing ten grains of chloride of sodium, may be freely used with the irrigator every ten minutes, until there is manifest abatement of the discharge, when the interval may be gradually prolonged until finally, when no more pus is formed, it may be discontinued altogether. In the virulent gonorrhœal types of inflammation, Jeanel's emulsion of copaiba may be instilled every four hours with great advantage. To illustrate this treatment, permit me to recite the case of C. L., aged 19 :—He came from the country with gonorrhœal ophthalmia of four days' standing ; the cornea in the right eye had already sloughed, leaving the iris exposed in the central portion ; a small part of the superior pupillary margin being still protected by an overlapping edge of the posterior elastic layer of the cornea, led me to employ sulphate of atropin solution in the attempt to dilate and thereby retract this part of the iris from the vicinity of the perforation. The cornea throughout all the remaining portion was so infiltrated and opaque as to make it impossible to see the iris. In the left eye, the cornea presented a gray, cream colour, the surface epithelium being thoroughly infiltrated and abraded in small area. The urethral discharge was very profuse, as well as the discharge of pus from the conjunctiva. I gave him five minims of balsam of copaiba, in a capsule, every three hours, and two drachms of Rochelle salts, in one pint of water every morning. He was directed to have his eyes irrigated every ten minutes with the following :—℞. Bichloride of mercury, gr. viii ; chloride of sodium, ʒ iii ; distilled water, cong. i ; sulphate of atropin, gr. ii. He used as a collyrium, every four hours, the following :—℞. Jeanel's emulsion of copaiba, ʒ ii ; distilled water, ℥ vi.

Two weeks after admission to the hospital he returned home, able to read with the left eye, and to count fingers across the room with the right. This result could not have been attained by any very widely different plan of treatment.—*Journal of the American Medical Association, January* 11, 1896, *p*. 70.

82.—SYMPATHETIC OPHTHALMIA.

By Louis W. Flanders, M.D.

[The author records a case and then makes the following remarks :]

In deciding the difficult question of whether to enucleate or not, I think we must, as a rule, disregard all statements of the patient himself. We must remember that he does not appreciate the dangers of sympathetic inflammation as we do, and that he will shrink from operation and retain his eye if possible. To this end he will exaggerate the amount of sight in the injured organ; he will minimise the amount of pain he suffers; he will carefully conceal all symptoms of irritation in the sound eye. He will withhold his consent to operate until some serious trouble begins on the uninjured side, and then, with blindness staring him in the face, he will finally yield.

Right here comes a point that is not understood by the laity, and upon which I have found physicians themselves were often cloudy—namely, that when sympathetic ophthalmitis has appeared it is usually too late to operate and often inadvisable. There is a vast difference between sympathetic irritation and sympathetic inflammation. Sympathetic irritation is characterised by blurring of near vision, photophobia, and, above all, by a tenderness of the ciliary body in a part or the whole of its extent, which can be brought out by pressure with the point of a probe even through the closed lids. These symptoms are not to be disregarded, but are not necessarily fatal, as they often disappear spontaneously in a day or two. Sympathetic inflammation usually shows itself as a serious iritis, as in the case cited above, or as an irido-cyclitis, often accompanied with keratitis punctata, while oftentimes the optic nerve, the retina, and chorioid are involved. Those cases which appear as a serous iritis give the most hope for recovery, but when complicated with cyclitis they are almost certain to go on to plastic exudation, to contraction of the vitreous, to detachment of the retina, and, in short, to the condition known as phthisis bulbi. If, then, we remove the exciting eye, we may by so doing deprive the patient of the only chance of sight he has; for it may in time quiet down, with partial sight remaining, while the sympathising eye is pretty sure to go on to absolute blindness.

The most generally accepted theory to-day as to the cause of the disease under consideration is that of infection. The investigations of Deutschmann and others seem to show that the optic nerves and chiasm furnish a direct path for the passage of micro-organisms from one eye to the other; and my reason for operating in the case just cited was to cut off the depôt of supplies and prevent further infection.

We may learn a lesson from this case with regard to the mode of attack and the period of incubation in this disease. Mark how insidiously it came on. There was no pain, no blurring of sight. The symptom that called the patient's attention to it was "redness" of the eye, and this did not appear until the inflammation had been going on long enough to cause the iris to become adherent in four places. Then, too, it was six weeks from the time of injury before the trouble began in the well eye. The violence of the inflammation had abated, the pain had disappeared, but it was evident that the work of infection had been going on for some time. From three to six weeks is the period at which sympathetic inflammation most frequently manifests itself, but it may be delayed for years. A patient came to me recently to be cured of "a cold" in his eye. There was ciliary congestion and marked tenderness in the organ, and upon the opposite side a blind stump, the sight of which had been destroyed by an accident years ago. When I recommended its removal he threw up his hands in disgust and said :—

"You are the third specialist who has recommended that in the last twenty years. I have these times every once in a while, and a little eye-water always cures them." That man was suffering from sympathetic irritation, and he may awake some day to the realisation that the last "time" has come.

It is necessary in these cases to have some rules for our guidance in rendering a decision, and the following are pretty generally accepted by the profession to-day :—

We are to enucleate :—(1) In irido-cyclitis, with a foreign body in the eye which can not be extracted by the ordinary measures. This I put first, because sympathetic ophthalmitis is almost sure to follow, and we must enucleate even though the sight be fairly good. (2) In cases of severe injury with hopeless destruction of sight, where an irido-cyclitis almost amounts to a certainty. (3) In idiopathic irido-cyclitis with complete loss of sight and great tenderness of the eyeball. (4) In a sightless and shrunken bulb, no matter of how long standing, where there are periodical attacks of tenderness and inflammation in the sound eye.

We must not enucleate when sympathetic inflammation has set in, if the sight of the exciting eye be fairly good.—*New York Medical Journal*, *February* 8, 1896.

83.—THE TREATMENT OF DETACHED RETINA.

[Mr. Wray read this paper before the Ophthalmological Society, London.]

The results of treatment in a case in which the distorted vision began in 1885 were demonstrated. The patient was seen for the first time in January, 1893. The left eye had barely perception of light, and the right eye contained a large detached retina involving about half of the fundus. The tension was decidedly raised, but the patient was and had been quite free from pain. As the other eye was quite blind from a penetrating wound, and had been so for many years, it was removed in the interest of the good eye. No more was seen of the case until January, 1895. The eye, under ophthalmoscopic examination, was found to contain a very large detachment, considerably larger than on the occasion of the last visit, so large in fact that although the media was clear, it was almost impossible to obtain a view of the disc. The tension was still markedly raised and the cornea slightly hazy. Vision reduced to hand movements 4 to 6 inches. The case was subsequently exhibited at the Ophthalmological Society. On April 7, the patient was operated on by tapping the detachment, and a quantity of dark yellowish fluid evacuated. He was then put to bed, atropine was freely used, and the eye firmly bandaged. Daily injections of pilocarpin were ordered, but had to be discontinued on the third day, on account of the patient's intolerance of the drug. A week later ophthalmoscopic examination showed there still existed a detachment of very considerable size, though the vision was improved to fingers at three or four metres. After allowing a few days for the patient to recuperate, a second operation was done, with the result that vision improved to $\frac{6}{24}$ in a good light, and the sight has fluctuated between that and $\frac{6}{18}$ ever since. The retina now appears in perfect apposition, and there exists, as is usual in such cases, a certain amount of choroido-retinal atrophy with pigmentation at the seat of the original detachment. The fields are much contracted, doubtless from the tension. The case proves that good may result from operative treatment, even in very severe cases of several years' duration. Little was to be expected from pilocarpin, and especially in elderly people and those suffering from cardiac disease. As the perfect rest treatment with atropine and bandage entailed confinement to bed for at least three to four weeks under almost insupportable conditions, and with the prospect of almost inevitable failure, it would seem better to operate at once, especially as the operation is almost free from risk under proper surgical precautions, and most surgeons do eventually operate after the failure of the simple treatment. As regards recent cases, speedy reattachment was necessary to prevent loss of function. If the subretinal fluid existed in any amount, several weeks would be required to obtain absorption and reapposition, whereas anatomical union was desirable, and probably the absence of this latter explains many relapses. In chronic cases, there will be even less tendency to rapid absorption, and therefore it would seem reasonable to tap at once, so that the period of confinement to bed is spent in promoting an actual adhesion of the retina to the choroid. Cases unsuitable for operation are those where the macula is detached, where the vitreous contains numerous bands of contractile tissue, vascular membranes, large hemorrhages, &c., and where the detachment is almost total, or the tension of the eye as low as − 3. A good result has been published in which the operation was done in a recent case with tension − 2. Clavelier's experiments proved that currents of 5 milliampères could be used for a minute without causing anything beyond transient opacity of the vitreous, and one operator published eleven cases in which he used electrolysis and obtained three ameliorations and two cures. As such currents cause only a transient opacity of the vitreous and leave no ophthalmoscopic changes behind, it is just possible that the beneficial results after electrolysis were due to leakage around the positive pole during the protracted period the needle was *in situ*. Constitutional remedies directed against gout, rheumatism, syphilis, &c., are slow in their action, and usually depressing.

Mr. Jessop had found, according to his experience, that after tapping the detachment returned or got worse. He had had one case in which the retina had become reapplied after treatment by rest and pilocarpin; great pigmentation followed in the reattached area.

Dr. Little had operated a good many times. He had had only two cases in which complete permanent cure was effected; he had seen no recoveries without operation.

Mr. Secker Walker advocated withdrawal of the fluid, and at the same time injection of normal saline solution into the vitreous. Temporary glaucoma ensued in one case, which passed off. The retina remained attached five weeks, but subsequently the detachment returned again.

Mr. Lang had had two cases of spontaneous cure under simple treatment by rest. He had tried puncture by various methods without success.

Mr. Tweedy had operated by every possible method: he had never seen a permanent cure; he had seen improvement. He questioned the diagnosis in cases of cure. He thought it right to do scleral puncture, however. The most successful case was that of a nurse who was myopic; the vision was reduced to hand movements. After rest and pilocarpin treatment vision was restored to J.1. The improvement lasted some time.

The President was able to give the further history of this case. He had seen the patient seventeen months later; she was quite well, and there was no sign of detachment.

Mr. Power had seen the suggestion made that an injection of fresh vitreous of a cat or dog should be made into the vitreous to reapply the retina by pressure.

Mr. Grimsdale had seen Mr. Frost attempt to inject vitreous, but he had found it impossible to make the vitreous flow through a syringe.—*British Medical Journal, November* 23, 1895, *p.* 1297.

84.—THROMBOSIS OF THE CEREBRAL SINUSES FOLLOWING SUPPURATIVE MIDDLE-EAR DISEASE.

By A. Jansen, Berlin.

[The following abstract of Dr. Jansen's paper is by Dr. Eisendrath, and appeared in the *Annals of Surgery*, January, 1896 :]

In a previous article (*Archiv für Ohrenheilkunde*, Vol. xxxv, Nos. 1 to 4) the author published 34 cases of thrombosis of the lateral sinuses occurring in the University policlinic of Berlin from 1881 to 1892. Of these 7 were operated upon, 6 of which were confined to the sinus, in the seventh the internal jugular was ligated without influencing the fatal termination. Three cases recovered after operation.

In the present paper Jansen adds 12 cases, of which 9 were operated upon from the end of 1892 to December, 1893, with 5 recoveries. He has also collected 31 cases of other operators, of which 15 recovered. Since January, 1894, as he remarks in a footnote, he has operated six times on the lateral sinus with 3 recoveries, and in 4 cases has ligated the jugular with 2 recoveries.

A true picture of the conditions at the time of a possible operation cannot be obtained at the post-mortem examination, for this shows the terminal stage, a thrombosis of both lateral sinuses and jugular vein, whereas at the operation either the sinus is found free or the jugular can be kept free by the early removal of the thrombus from the lateral sinus. In 9 of the 12 cases reported there was thrombosis of the lateral sinus, in 3 cases combined with thrombosis of the jugular, in 1 associated with that of both cavernous and inferior petrosal sinuses and ophthalmic veins, also of the jugular of the same side. In 5 there was purulent thrombosis of the lateral sinus ; all recovered after operation. In the remaining 3 cases there was purulent thrombosis of the superior petrosal sinus and of the jugular vein.

In consequence of earlier and more energetic interference, the author hopes in future to confine the thrombosis to the uppermost part of the jugular or the lateral sinus. In the former the acuter forms of suppurative middle-ear disease seem to be the principal etiological factor, in the latter the more chronic forms, and especially the desquamative. From these observations it results that in the majority of cases there is a thrombosis of the lateral sinus, frequently, also, one of the jugular vein. If at the time of operation the former should be free one must first look for a thrombosis of the jugular and then for one of the petrosal sinuses. The chief dangers resulting from these thromboses are, on the one hand, the pulmonary metastases, and, on the other, a suppurative meningitis.

In the 34 cases previously reported, there were 17 in which the thrombosis extended to the jugular. Of these 76·5 per cent. showed metastatic lesions. Where the sinus alone was thrombosed there were metastases and sepsis in only 35·3 per cent. In the case of thrombosis of the petrosal sinuses the danger is even less, 30 per cent. Thirteen of the 34 cases showed suppurative meningitis. Under the influence of more radical treatment, as shown in the 12 cases which form the basis of the present article, the frequency of suppurative meningitis, as compared with the previous 34 cases, has been reduced from 38 to 9 per cent., but that of metastases only from 76·5 to 62 per cent. in the cases in which the jugular was also thrombosed. In the remaining 3 cases of lateral sinus thrombosis only once a slight metastasis in the shape of a phlegmon of the hand was observed.

The author divides the symptoms into general and local. He has also observed cases of pure thrombosis of the lateral sinus, in which the thrombus was either not purulent, or, if so, had no communication with the general circulation or meninges. In such cases, after the evacuation of an abscess situated around the sinus, there were either no further symptoms, or, if any, only a headache. The chief symptoms are:—Pyæmic and septic fever with chills, then metastases; optic neuritis; symptoms of meningeal irritation; symptoms caused by the extension of the thrombus to the jugular, cavernous sinuses, mastoid vein, and torcular Herophili, but especially by the perisinuous abscess.

The majority of cases of chronic suppurative middle-ear disease, especially the desquamative (cholesteastom.), show no increase in temperature; the more acute do. But this is usually decreased at the time at which a thrombo-phlebitis is likely to occur. Hence a pyæmic form of fever, and especially repeated chills, must act as a warning, in such cases, to look out for thrombosis of the sinuses. In 53·5 per cent. of 43 cases collected by the author from the literature of the subject at the time he wrote his first paper there was choked disk present. In his first series of cases it was present in 35 per cent., and of these the majority were complicated by extradural abscesses. In his present 12 cases it occurred in only 3—*i.e.*, 25 per cent.—and these were all cases of thrombosis of the lateral sinus. The meningeal symptoms are vertigo, restlessness, nausea, rigidity of neck, and stupor. They should serve as a last warning to operate.

When the thrombosis extends towards the jugular the symptoms are better marked. Pain on swallowing, on movement of head, swollen glands, and a feeling of resistance along the vein. Still more characteristic are those of thrombosis of the cavernous sinus—swollen lids, and, later, exophthalmos.

That of the mastoid vein shows itself in swelling and tenderness on pressure over the region behind the mastoid. The frequency of the occurrence of abscesses around the sinus is shown by the fact that in three and a half years the author observed this condition 31 times in 35 cases of thrombosis of the lateral sinuses. The symptoms of these abscesses, in addition to those of general cerebral compression, are an area behind the externally intact mastoid process over which distinct swelling and pain on pressure exist. In general, a profuse discharge of pus from the ear, when the mastoid is intact, must lead one to suspect suppuration around the sinus. When, in addition to these symptoms of a perisinuous abscess, one finds a pyæmic form of fever and chills, one can scarce err in diagnosticating a thrombosis of the lateral sinus. In general, if one does not find sufficient cause in the mastoid for the symptoms, one should always search for an extradural abscess. These occur most frequently in cases in which, owing to the thickness and sclerosis of the mastoid process, the pus is compelled to seek an outlet in the posterior fossa of the skull.

The prognosis depends upon the early diagnosis of the presence of an abscess around the sinus and its evacuation, for by this means one may prevent the formation of a thrombus, or, if one has formed, hinder its becoming purulent. The earlier the thrombosis of the lateral sinus is operated upon, the more favourable the prognosis. Inspection and palpation of the sinus may enable one to make a diagnosis when every other means fails. Resistance of the wall, gangrenous or fistulous areas are of greater value than the absence or presence of pulsation.

As to the justifiability of an operation down to the sinus, the author's cases show plainly that such a measure is of the greatest value. Of 45 cases of thrombosis 29 were not operated down to the sinus; of these only 2 recovered. The remaining 16, in which the sinus was opened, showed 8 recoveries. Operation is as urgently demanded as in strangulated hernia. Hemorrhage can be checked by tamponnade. Towards the jugular one should not go to the end of the thrombus. We remain ignorant of the fact whether the thrombosis extends far into the jugular or whether metastases will follow. If the uppermost portion of the jugular is thrombosed there is danger of its spreading to inferior petrosal and cavernous sinuses. This danger is not decreased by ligation of the jugular; rather increased.

As regards the ligation of the jugular, in every case the author differs from the majority. He considers it unnecessary, basing his opinion upon two cases in which, after ligating the jugular at the level of the cricoid, pulmonary metastases appeared.

If the operation on the sinus is confined to evacuating the puriform thrombus and not touching the firmer one, which the author has always observed towards the cardiac side, ligation is not needed. In the cases in which thrombosis of the jugular is diagnosticated ligation is indicated. Of 13 cases treated by opening of the sinus alone 61·5 per cent. recovered; in 3 the jugular was also ligated with no recoveries.

The method of operation employed by the author is to make a vertical or rectangular incision to the bone. He then chisels into the posterior fossa of the skull until the sinus and dura are laid free. He prefers the chisel to the bone-cutting forceps. He opens the sinus as far as the thrombus is softened, and excises its wall. After dusting the wound with iodoform powder he packs it with iodoform gauze. Daily change of dressings. Should the temperature continue high and chills not disappear, it is best to ligate the jugular and facial veins, opening up the former to the base of the skull.

The remainder of the article takes up the cases in detail, the results of which have been given above; several points of especial interest not treated of in other portions of the article are brought out here. In one case in which the sinus was opened the choked disk increased in intensity in spite of the fact that no further thrombosis occurred. In a second, in which there was thrombosis of both sinus cavernosi and of the ophthalmic veins, there was no choked disc.

In several cases, after ligation of the jugular, the thrombus above rapidly became purulent, so that he advises immediate opening of the vein to the base of the skull.—*Sammlung klinische Vorträge*, No. 130.

AFFECTIONS OF THE SKIN, &c.

85.—PERMANGANATE OF POTASSIUM IN THE TREATMENT OF DISEASES OF THE SKIN.

By L. Duncan Bulkley, A.M., M.D.,
Physician to the New York Skin and Cancer Hospital, &c.

Remedies which are able to give efficient relief to pruritic conditions of the skin are so relatively few that each addition to the number is not without value, although the range of its applicability may not be so great as might be desired. In the following very brief communication I wish to call attention to a remedy which has served me excellently in a considerable number of cases of eczema, and also somewhat in other pruritic eruptions, during the past two years, and which I am prescribing with increasing confidence. It is quite possible that its use is known to many, but as I learned it accidentally from a patient, and have not seen it mentioned in text-books or journal articles, I feel that it cannot be very widely employed.

Briefly, it is simply a solution of permanganate of potassium in water in a strength of from one to two per cent., or possibly stronger in certain cases. This is brushed or mopped over the surface and allowed to dry, which it does very quickly. The well-known brilliantly pink or magenta-coloured fluid turns very soon to a medium dark brown, staining the skin for some little time, and is finally thrown off by exfoliation of the tissues which it has oxidised.

Thus far I have used it mostly on subacute eczema, exhibiting patches of erythematous or papulo-squamous surface. I have not commonly employed it on moist or weeping surfaces, but recently a patient applied it to such on the thigh with most beneficial effects. It may sting or smart a little if the surface be at all abraded, but this is never complained of, and patients speak only of the immediate relief from the itching in the part which it affords. I have frequently had a little calamine and zinc lotion sopped on after it was dry, mainly to guard against any excessive action of the permanganate. When the surface has tended to dry up too much I have had a little mild or negative ointment applied after the permanganate was quite dry. The application of the solution of permanganate needs to be repeated, perhaps twice daily, and some patients have used it oftener with advantage. As it is an oxidising agent it often serves very well in reducing thickening of the skin, and I have seen patches which had resisted other treatment melt away under its use.

Although I have mentioned applying another lotion or an ointment over the dried application of the permanganate, there is no question whatever as to the effect of the remedy under consideration. In some cases it has been employed alone, and in other instances the patient has voluntarily omitted the additional local medication, finding that the permanganate alone sufficed to give relief; not infrequently where other remedies had been employed ineffectively the addition of the latter secured the desired result.

It is understood, of course, that in thus recommending a particular local application I do not advise it to the exclusion of other and proper dietary and internal medical treatment, nor do I wish to exaggerate its special value to the deprecation of other valuable topical treatment. I only wish to call attention to a local measure which, I believe, is not well known, and which has helped me much in managing some rather rebellious cases.—*Medical Record, February* 29, 1896, *p.* 302.

86.—NOTES ON SKIN DISEASES IN CHILDREN.

By Leslie Phillips, M.D.,
Surgeon to the Birmingham Skin and Lock Hospital, England.

[The following are taken from Dr. Leslie Phillips' paper :]

Eczema Capitis in Children leading to Alopecia.—In children eczema of the scalp is not unfrequently seen to cause marked falling of the hair. The local baldness is never complete as in alopecia areata, but consists generally of a severe thinning of the hair. In some cases, however, the suspicion of tinea tonsurans is strongly suggested, and then some care in observation is needful to differentiate the condition. The occurrence of cases of eczema is not very uncommon in which a considerable degree of temporary baldness is seen, and as the loss of hair is confined to the areas actually affected with the eczema, the patches are nearly always irregular in shape, never so rounded as in tinea or alopecia areata, and always shading off rather than abruptly margined. The following ointment usually suffices to cure the condition. It should be applied after the thorough removal of crusts ;—℞ Ung. zinci oxidi ; ung. hyd. ox. rub., āā ℥ ii.

Eczema Seborrhoica Capitis in a Child.—The following case is an example of a variety of eczema less frequently met with. Eczema of the head in children is nearly always vesicular and attended with very considerable crust formation, the crusts being more or less friable and easily detached. The present example constitutes, however, a distinct type, and its consideration and the records of its treatment are therefore of value. The lesions resemble the intensely hard "caked" crust sometimes seen in eczema affecting the eyebrows of adults. A. W., a girl five years old, presented yellow, dry, flat, very hard patches of crust distributed over and closely adherent to the scalp. The disease was easily cured by the following treatment. The hair was cut and the hard crusts removed by poultices, after which the following ointment was applied :—℞ Ung. zinci. oxidi., ℥ i ; ung. sulphuris., ʒ ii ; acidi salicyl., gr. v. ; adepis., ℥ i ; m. ft. ung.

Treatment of Tinea Tonsurans.—The considerations which guide me in routine prescribing for ringworm are based upon the following practical observations :—(1) That, especially in recent cases, remedies may do harm by being too strong or irritating, and (2) that liquid embrocations or applications are generally much more useful than ointments. With regard to the first point, I have convinced myself that the sound parts of a scalp when irritated by strong applications much more easily become a prey to the invasion of the tricophyton than when left alone or soothed, and hence that irritant applications not only often fail to cure the affected area but actually cause the extension of the disease. A commonly used routine remedy is ung. carbolici co., having the following formula :—℞ Ung. sulphuris., ℥ j ; acidi carbolici., ʒ ij. ; misce bene et adde. ; ung. hyd. nit., ʒ ij ; misce fiat unguentum. I have long since ceased to use this, for it was a frequent observation to find that a fresh patch had appeared in spite of the fact that the scalp was being vigorously treated with. With regard to the second point, I obtain much more satisfactory results since I have discarded ointments in favour of liquid applications. Indeed, I now seldom use an ointment for this disease, the only cases in which I do being those of diffused ringworm, which present the appearance of an asbestos-like mycelioid mass on the surface of the scalp. Here a mild ointment containing gr. xv of carbolic acid with a similar quantity of precipitated sulphur to the ounce has a beneficial cleansing influence. Similarly a weak chrysarobin ointment (gr. x to the ounce) has its use. The rule of practice, however, remains. I am accustomed to regard alcohol as a good basis of treatment, it being at the same time an admirable and cleanly vehicle for the conveyance of other parasiticidal remedies, such as carbolic acid, thymol or lysol. The following application I have found useful :—℞ Spt. vini. rect., ℥ ii ; camphoræ., ʒ i ; hydrargyri perchloridi., gr. ii ad gr. vi ; misce fiat embrocatio. The addition of glycerine to spirituous applications is often of distinct advantage.

Lactic Acid in Lupus.—In many cases of tubercular lupus where much chronic inflammatory infiltration exists, with or without ulceration, the application of 75 per cent. lactic acid as a caustic is often beneficial, but it will be found that that smooth-surfaced stage of lupus in which the apple jelly-like nodules are superficial, closely approximated, and visible, is entirely unaffected by this acid, even when perseveringly used.

Resorcin in Xeroderma.—In my experience, resorcin has in xeroderma a much greater tendency to vesiculate or to form bullæ than it has when applied to the healthy skin, and much weaker applications suffice to do so. I have seen most extensive vesiculation produced by a 4 per cent. ointment in this disease, while great benefit resulted from the application of a 2 per cent. strength. This example strengthens the plea for dilute strengths of our topical applications in dermato-therapeutics.

Scabies and Impetigo Contagiosa.—Scabies and impetigo contagiosa are commonly associated, and the impetigo may be conveyed to a part of the body quite unaffected with scabies, such as the face. A child, 8 years old, afforded an instance of several of the separate characters of the disorder. In the interdigital spaces of the right hand each burrow had apparently excited a pustule, while the corresponding part of the other hand presented only redness from scratching, no cuniculus being seen. A few spots of impetigo contagiosa, secondary and conveyed, existed about the mouth. The following is a very convenient and efficient formula for scabies and its attendant pustulation :—℞ Ung. sulphuris., ʒ i ; zinci. oxidi., ℥ j ; vaselin., ℥ j ; resorcin., ℈ i ; m. ft. ung.—*Pediatrics, April* 1, 1896.

87.—THE PATHOLOGY AND TREATMENT OF PRURITUS.

By McCall Anderson, M.D.,
Physician to the Glasgow Western Infirmary.

In the remarks which follow reference is made exclusively to that form of itching to which the term pruritus is usually restricted—that is, where itching is the only cutaneous symptom, apart from the lesions produced by scratching, and which I am in the habit of calling pruriginoid eruptions. This, as Malcolm Morris observes, is a sensory neurosis caused by some disorder of the related nerves, independently of any source of irritation of the surface. Bronson has further elaborated this definition by stating that the disturbance is of the nature of a dysæsthesia, due to accumulated or obstructed nerve excitation with imperfect conduction of the generated force into correlated forms of nervous energy, while the scratching relieves itching by directing the excitation into freer channels of sensation. This view may not be generally accepted in its entirety, but at all events there can be no question that pruritus is the result of a direct, or perhaps sometimes of a reflex, disturbance of the cutaneous nervous filaments, and referable to the nerve centres.

The pruritus of advancing years is supposed by many to be due to "the structural changes to which the tissue of the skin, as well as that of most other organs, is subject," but a more potent cause is probably to be found in the sedentary habits and decline in the functional activity of the organs and tissues of the body of old people, with, as a consequence, impairment of nutrition and the circulation of impure and therefore irritating blood. The itching which often accompanies jaundice is doubtless due in great measure to the presence of the bile acids in the blood, but the fact that many cases of intense jaundice are free from it, while more moderate degrees of it are the source of severe pruritus, is not so easily explained, although it may be accounted for perhaps by the greater sensitiveness of the nervous apparatus of some persons or by slight differences in the composition of the bile which renders it more irritating in some cases.

Functional and organic diseases of the genito-urinary organs and pregnancy are well-known etiological factors in its production, while the gouty diathesis and derangements of the digestive organs are probably amongst the most frequent of all causes. In the latter case it is supposed by many that the irritation of the skin is of a reflex nature, although it may be contended with much greater show of reason than the products of imperfect digestion are direct irritants of the cutaneous nervous filaments.

The connection between pruritus and diabetes, though well-established, is often unrecognised, because the relationship of the two is not so universally known as it ought to be, and because, in my experience at least, the pruritus often occurs in those who present few, if any, of the typical symptoms of diabetes; indeed it frequently happens that diabetes is not suspected until the onset of pruritus leads to an examination of the urine.

Another form of pruritus of some interest is that which attacks some persons in cold climates during cold weather in autumn, winter, and spring, and which is apt to be an annual visitor, which Duhring has made us familiar with under the name pruritus hiemalis.

Finally, the disease may be mental rather than physical. This is well illustrated by the case of a lady who consulted me on account of what she described as an intolerable irritation of the skin, which deprived her in great measure of sleep, and made her life a burden to her. Two years before this she visited a deaf friend, who used a speaking trumpet. She put her mouth close to the mouthpiece of the trumpet, and from that moment she began to experience the abiding irritation for which she sought my advice. I never saw her again, but it is not improbable that her case ended in insanity. Not infrequently the cause of the pruritus is involved in mystery, or that which produced it has passed away, while the irritation continues, owing to the cutaneous nerve filaments having, so to speak, contracted a bad habit.

It will be gathered, then, from what has been said, that without denying the influence of reflex irritation in the production of this disorder in some cases, I am of opinion that most are dependent upon direct irritation of the nerve terminations in the epidermis.

Before entering upon the treatment of pruritus we must take care to satisfy ourselves of the accuracy of our diagnosis, so as to exclude that numerous class of cases in which the itching is but a symptom of other disorders, such as urticaria, phthiriasis, and scabies. Having done so, we must, in the next place, make a thorough examination of the patient, in the light of the etiological factors, which have just been touched upon, and endeavour to correct any derangement of the general health which may be present. But sometimes we are unable to find any satisfactory explanation of the phenomenon, or the cause may be incapable of removal, or it may be got rid of, and yet the pruritus persists, in which case it must be treated empirically. It is unnecessary to dwell upon the local treatment, for, although temporary relief may be afforded by the use of the many well-known antipruritic—especially spirituous—lotions and ointments and sedative applications, they have too often little permanent influence upon the disorder, except of course in those cases which are dependent upon some local cause—such as hemorrhoids, ascarides, stricture of the urethræ, &c.—and which must be got rid of.

In some cases, especially if there is any suspicion of nervous or nutritive debility, nerve tonics—such as phosphorus, arsenic, or strychnine, alone or in combination—may be tried, the last two preferably by subcutaneous injection. Dr. Bulkley, of New York, speaks highly of tincture of gelseminum in doses of 10 minims, repeated in the same, or in a larger dose, every half hour, or until a drachm is taken within two hours; and of tincture of cannabis, in doses of 10 to 30 minims thrice daily after food, and well diluted; while Hebra recommended the internal administration of carbolic acid, to the extent of 10 to 16 grains daily. For my own part, the best results have been obtained by the administration of atropine, or one of the coal tar derivatives, and by the use of electricity. Atropine is best given subcutaneously, beginning with $\frac{1}{100}$ grain at night, the dose being cautiously increased so long as the physiological effects of the drug are not pronounced, and so long as the pruritus is not completely subdued. Of the coal tar derivatives, antipyrine and phenacetine are especially to be recommended, particularly the former, the initial dose being 10 grains. But here, again, the dose must be steadily increased, and it is surprising what large doses may be not only tolerated, but taken with advantage, as I have shown with regard to antipyrine in connection with a somewhat allied disorder—chorea. One of these remedies may be often combined with great advantage with electricity, or the latter may be used alone. It may be employed in various ways, either in the shape of the electric bath or by the application of the continuous current of electricity of moderate strength for ten minutes night and morning, and when the itching is troublesome, one sponge (the positive pole) being applied to the top, and the other to the bottom of the spine.

Treatment carried out upon the lines which have been indicated is calculated to yield excellent results in a large proportion of the cases; at all events, in my own experience, it has usually proved successful.—*British Medical Journal, November* 30, 1895, *p.* 1343.

88.—A CASE OF URÆMIC BULLOUS DERMATITIS.

By ALFRED G. BARRS, M.D., F.R.C.P., Physician to the General Infirmary at Leeds, &c., &c.

Annie C., 19, a domestic servant, was admitted to the Leeds Infirmary on June 15, 1895, when she complained of pains in the legs and feet, general swelling of the lower limbs, and a skin disease. An attempt was made to elicit the history of the malady, but owing to her condition of semi-stupor it had to be abandoned. It was, however, ascertained that she had on three occasions been laid up with general swelling of the body, and had been in bed four weeks on that account when the skin disease made its appearance. For some weeks she had had pain at and about the vulva, chiefly when walking, as well as some vaginal discharge. She said that the eruption began with intense pain in the feet and rapidly spread to the rest of the body.

On admission she looked very ill and pallid, and complained constantly and loudly of pain in the legs and feet. She seemed to be much concerned about her condition, but at times became incoherent with muttering, and almost unconscious. The lips and teeth were dry and the gums sore. The tongue was dry, coated, and fissured. The whole of the cutaneous surface of the body was more or less affected. The feet were the worst, and from these the skin became clearer as the trunk was approached. The arms and hands were severely affected, and here again the lesions were less intense as the shoulder was reached. The front of the abdomen was covered with a rash, but the back was comparatively clear. The face was much affected, the scalp but little so. On examining the feet more closely a foul odour was found to arise from them. They were swollen, and the toes hyper-extended, especially the great toe on the right side, which had a grooved sore on its dorsal surface. The soles of the feet were covered with large, painful blisters containing semi-opaque fluid, the heels and the balls of the toes being most affected. The toes were also blistered, but the nails were unaffected.

Smaller blisters covered the dorsum of the feet, each blister being placed on an angry-looking base. In all other parts of the body the eruption consisted of clusters or patches of tough vesicles placed upon areas of inflamed skin of a bright pink rose colour. The individual lesions were exceedingly coarse and tough, especially in the palms of the hands, where the vesicular character of the eruption could be well seen. Here and there the vesicular stage had not been reached, and the inflamed skin showed only papular elevations, in some instances with a distinct scaliness of the surface.

At this time only a few drachms of urine could be obtained. It was turbid, with a heavy deposit, and contained albumen in the proportion of 11 grammes per litre. The deposit contained numerous epithelial cells (bladder and vaginal), a few casts, and some small round cells, probably blood discs. Temperature, 103° F.; pulse, 112; respiration, 28. Her distress was so great that liq. morph. hydrochlor: (min. 15), was given. She was ordered a saline mixture and milk diet, with lead lotion to the feet only.

The following day she was more comfortable, and was able to give some further details of the history of her illness as follows:—About a month before admission several sores appeared on the vulva, some as big as a shilling, which discharged offensive matter. At the same time the labia were so much swollen that she was almost unable to walk. Soon after this the urine was found to be bright red in colour, and continued to be so for fourteen days, during which time there was much pain on passing water. The rash appeared three weeks before admission, beginning in the feet, and spreading thence to the whole of the body. The feet then became blistered, and a week later began to swell. This was accompanied by intense pain all over the body. There was intense, almost unbearable, headache, preventing sleep, and she ultimately became delirious. For more than a week she had vomited constantly. Vision had not been affected. In 1893 she had chicken-pox very badly. In 1894 she had dropsy, lasting six months. Her legs, trunk, and face were swollen, especially the eyelids, so that she was unable to see. [The patient's condition became worse three days after admission, and two days later she died of apparent uræmia.]

The clinical features of the case may be said to be: (1) A grave general condition, clearly toxæmic in origin; (2) an almost universal inflammation of the skin of the vesiculo-bullous type; (3) a very scanty and highly albuminous urine, containing casts and blood; (4) a previous history of general dropsy.

At the post-mortem examination the remains of the rash were still to be seen in the shape of areas of light-brownish staining, with desquamation. The kidneys weighed eleven ounces, and were typical examples of the mottled form of chronic parenchymatous nephritis. The heart weighed eleven and three-quarter ounces, and the wall of the left ventricle was a little thickened. The blood-vessels showed no change. The brain and other organs were natural in appearance.

Remarks.—I have no doubt that the case here recorded was an example of acute dermatitis, resulting from the effects of chronic Bright's disease. At the moment of the patient's admission to the hospital the exceedingly unusual appearance of the skin disorder, both in its intensity, distribution, and anatomical characters, especially the terrible condition of the feet in this respect, rendered its designation a matter of much difficulty, but the rapid supervention of coma and other toxæmic manifestations, along with the character of the urine and the changes in the fundus oculi, soon revealed the true nature of the disorder. My experience of uræmic dermatitis is confined to this case, though some writers, notably Dr. Pye-Smith, speak of skin eruptions in the course of, and due to, Bright's disease as not of great rarity. The cases recorded by Dr. LeCronier Lancaster, eight in number, afford no example of the grossly bullous condition seen on the feet of my patient, though, from Dr. Lancaster's description of the eruption, there is clearly no great dissimilarity between his cases and the case here recorded. Dr. Lancaster attributes the eruption to the presence of a poison in the tissues, and points out its close alliance to the rashes of pyæmia, drugs, and ptomaine poisoning, and in this view I quite concur; indeed, when I first saw the case, so strikingly unusual were its features that I was inclined to attribute it to some drug influence. The history of sores upon the vulva had at one time raised a suspicion of syphilis, but I have no doubt that there was no venereal element in the case. The vulval sores were, I believe, due solely to the rubbing together of the œdematous labia.—*British Journal of Dematology, January*, 1896, *p.* 9.

Obstetrics and Gynæcology.

89.—FUNIS PRESENTATION AND FUNIS PROLAPSE.

By Edward J. Brady, L.R.C.P.I., L.M., &c.,
Coombe Lying-in Hospital, Dublin.

[The notes of the cases have had to be omitted owing to conditions of space.]

It is, perhaps, unnecessary to define what is meant by the terms presentation and prolapse of the funis, yet a word by way of explanation may not be misplaced. By funis presentation is meant that condition in which the funis is the first portion of the fœtus, or more correctly, perhaps, of the fœto-maternal structures which is felt on examination through the os uteri, or through the lower uterine segment within the sometimes protruding and intact membranes. Prolapse of the funis, on the other hand, is that condition which can only exist after the membranes have ruptured, and is generally concomitant with their rupture and the consequent rush of the liquor amnii—the sudden escape of the " waters " bringing down one or more coils of the funis alongside the presenting part into the vagina, or may be outside the vulva, and before the presenting part—vertex or breech—has fully engaged the pelvic brim. Once the pelvis is occupied, and the presenting part has moulded itself thereto, prolapse cannot take place.

It will not require much consideration to convince us that either of these conditions, particularly the latter, must of necessity constitute a grave complication in any case of labour. If there be a grain of comfort in the matter it must be in the knowledge that the risk is one-sided or confined to the child generally, but as we have a duty equally onerous to the child and to the mother, we cannot ignore the gravity of the case.

The causes of funis presentation are variously stated, and it is needless to recapitulate them, as in ninety-nine cases out of one hundred the medical attendant can neither foresee nor prevent them. Funis presentation is rare, because I believe it is very seldom recognised before the membranes have ruptured and prolapse has taken place. Once recognised, however, what are we to do? I am assuming that the child is alive and viable—*i.e.*, independent of the mother if delivered.

(1) If need be give an anæsthetic, and try abdominal or external version—easy in theory, but very difficult to practice successfully—which, if the version can be performed at all, may have to be repeated two or three times before the funis is "hooked" on to one or other of the fœtal limbs.

(2) Attempted combined version—*i.e.*, per vaginam with one hand, and over the abdomen with the other. This mode requires great care and patience, because it is most essential that the membranes be maintained intact as long as possible. The effect you hope for is the same, of course, as in the first instance.

(3) If the os uteri is sufficiently large or dilatable to admit of speedy delivery, rupture the membranes as high up as possible to lessen the risk of prolapse, and you can choose between replacing the cord well within the uterine cavity by means of a repositor, or introducing the hand and performing internal version in cephalic presentations. Another alternative is the forceps. In breech cases the procedure is as usual in extracting the fœtus, the great danger being with the after-coming head.

(4) If the case is seen early you may try the postural method —the genupectoral position. Its disadvantages are—it is repugnant to the patient, and it is so uncomfortable that it cannot be long maintained. The only advantage that can be claimed for it is, I think, a certain amount of delay; therefore it is suitable for the nurses to employ who can recognise a funis presentation before the arrival of the medical attendant. Of course it is understood that the nurse is not further to interfere, but if there is need for temporary alteration of the position of the patient, she must manage it as quietly and as easily as possible.

In one set of cases when the medical man arrives it is only to find one or more loops of the cord prolapsed, feebly pulsating, or flaccid, and quite pulseless in the latter condition, the chance of saving the child being hopeless; and if the presentation be in the long diameter of the pelvis, whether it is head or breech, it is better not to interfere, but let natural efforts expel the uterine contents. If, on the contrary, owing to malposition or other cause, we can have no hesitation in delivering—when delivery is indicated by maternal symptoms—with the least possible risk to the mother, totally ignoring the child, which is now an inert mass.—*Dublin Journal of Medical Science, January*, 1896, *p.* 38.

90.—SOME UNUSUAL CASES IN OBSTETRICS.

By Professor H. H. Powell.

[The following is taken from Dr. Powell's paper, read before the Cleveland Medical Society :]

I have selected from recent cases of interest, three in which I performed craniotomy. The selection of craniotomy cases was chosen simply because in these latter days we hear very little about the operation ; almost as if it had gone to oblivion ; very little is heard of craniotomy. Within a year, I think I have had as many as usual to perform for one cause or another, and I am under the impression that these operations have been judicious.

With reference to the case of hydrocephalus, as a matter of course the thing to do was to perforate ; that will not be questioned ; there was no alternative.

With reference to a case of twins and the unusual condition of this locking of heads above the brim. Even here, had both heads presented in this contracted pelvis, the first one would have been prevented from getting over and becoming fixed, although time sufficient had been given. After examination had proved that this was the difficulty, I think it was impossible to deliver these children without perforating. If, however, one had living twins in that position, would the operation not be Cæsarean section, with the present status of the operation and the proper surroundings? If such a condition could be found a little earlier, would not the operation of Cæsarean section be justified? There would be nothing in such a case to prevent rescuing the two children, and I can see that the woman might be in good condition for operation. Of course, the operation of symphysiotomy would give no assistance in such a condition as this. With this prolapsed cord ceasing to pulsate, of course the thing to do was craniotomy, and a most difficult thing under these conditions. Aside from these comments, there is the possibility that some of you gentlemen may think that the cessation of the heart beat of this last case would not justify one in doing craniotomy, but would prefer symphysiotomy. It must be remembered that forceps had been applied during the night, and that such cases are not favourable ones for symphysiotomy, whereas they are very favourable for craniotomy, so far as the woman is concerned. I apprehend that there may be a diversity of opinion about these cases, and shall be glad to have criticism.

Discussion.—Dr. Campbell.—The first one, of course, there is no objection to. The second case, the twins, there is a question just how they were locked. By some manipulation it might have been possible to turn one of them feet foremost. In the last case, I would like to inquire just how large the head was, what the presentation was, and what the relation of the head to the brim of the pelvis, how much the head would have been pressed out of shape in being delivered, and also how much force was used in the attempt to use the forceps.

F. S. Clark.—I have been very much interested in the report of these cases. It seems to me it is a very fine point to decide whether a man should do craniotomy on a living child, or symphysiotomy, or Cæsarean section; but it seems to me when the child is dead, under any circumstances craniotomy is to be preferred to a high forceps delivery, and better than high forceps where the head is not engaged, because we have then only the mother to think of. Under these circumstances the danger to the mother is greater during a high forceps delivery than during a craniotomy, because there is greater danger of tearing the parts than to deliver a diminished head with the cranioclast. In the case of the twins the question came up in my mind just how much the lessening the diameter of the head by perforation was going to relieve the locking. If the child were dead, we would not think of symphysiotomy or Cæsarean section.

Dr. Tuckerman.—There is one point in the relation of a living and dead child to a labour, and that is the aid which the live child constantly renders to its own delivery. You place your finger on the head and you will find the living child is twisting its head around and around to find the easiest place for its head, and the easiest place for its head is always the way out. We have always noticed this. But one of the obstructions to the delivery of a dead child is the fact that the child cannot help itself in that way. I think the doctor's position is correct, that with a dead child craniotomy is the easiest way out.

Dr. Sawyer.—The fact of craniotomy being applicable to dead children, is received everywhere, the question is whether craniotomy on living children should be performed. That, of course, depends upon circumstances. If the operator is at hand, I think that statistics show that Cæsarean section is more desirable than craniotomy, but craniotomy can certainly be performed by men who would hesitate to undertake Cæsarean section. It can be done without injury to the mother, recognising, of course, that there is not such a degree of traction as to render the operation inadvisable. It seems to me, the whole discussion of craniotomy turns on whether the child is living or dead. Where one might be competent to do craniotomy, he would not feel himself competent to do Cæsarean section. I do not know that there is any criticism to make on the cases of Dr. Powell. He does not say whether he made any effort to ascertain whether the child was dead or living until he introduced his hand. All that is a matter, perhaps, of each one's individual notions, but it would seem to me it would have been entirely proper for him to have made an external examination to discover the condition of the circulation of the child, and quite possibly he might have discovered the fact that there were two children instead of one if he had made a careful external examination.

Dr. Powell.—Relative to this question of the influence that the death of the child has upon labour. It is pretty well recognised that there is an influence. There is less tonicity to a dead child. A living child, by its tonicity, aids delivery, and also by its movements incites action in the womb. The point suggested by Dr. Campbell, as to whether twins could not be turned, I doubt whether the doctor really meant that. You cannot do very much in turning twins, especially with the heads locked. It must be remembered that these were not the classical locked twins. There the locking is in the true pelvis—here the locking, as we call it, was above the brim, and so firm as to make it utterly impossible to move that head to the brim, and then the prolapsed chord settled the matter, so far as that child was concerned, and made perforation the only hope of getting the second child alive.

With reference to the diagnosis, I will state that Dr. Mabley said to me that he thought it was possible that he had twins there a day or two before, believing he had heard two fœtal hearts. We made careful examination at the time of operation, but the relations had very much changed. With the labour pains things are very much mixed, so that it is not always an easy matter to determine twins. Twins are generally a surprise to everybody, although I have diagnosed twins a little while before confinement.

With reference to the position of the head in the last case, it must be remembered that attempts at delivery had been made at various times through the night. Forceps had been applied by a pretty strong man. The head was in the first position, but had made no progress in entering the brim. It was fixed by the tonicity of the womb. I made all the efforts with my forceps that were justified after that history.

With reference to the question of diagnosis of hydrocephalus, I think the doctor stated it had been diagnosed as early as 8½ or 9 months. I think it is possible—the gentlemen who live in great maternities and see those cases right along and make it a sole study—I think it possible that perhaps in quite a large percentage of cases, there are men who are skilled enough to diagnose hydrocephalus, but I think the percentage of such men is extremely small. And this whole question of diagnosis by external manipulation is one which requires observing work, and there are comparatively few men who are very expert at it. I am free to confess that I believe there are men who are skilled enough to come very accurately at it, but I have seen very, very few of them who did not have to rely on an external examination.—*Cleveland Medical Gazette, December*, 1895, *p.* 95.

91.—FOUR CASES OF EARLY EXTRA-UTERINE GESTATION.

By ALBAN DORAN, F.R.C.S., Eng., Surgeon to the Samaritan Free Hospital.

[The following is taken from Mr. Doran's paper.]

About a year ago within the space of four months I had under my care four patients who consulted me for symptoms now very familiar to the reader of medical literature. These cases suggest a consideration of certain diagnostic features and of the justifiability of operative interference. The latter greatly depends upon the former. One case clearly required immediate operation. The second was in such suffering that surgical aid was sought and proved justifiable. The third was in a somewhat similar condition, but the patient was single, the clinical history not quite reliable, and the symptoms obscure in certain respects. The operation was, strictly speaking, exploratory. The fourth, which resembled the others in many ways, showed no acute symptoms and recovered after prolonged rest without any operation.

[The details of the four cases are then given. Three were operated on with success and Case 4 recovered without operation. The patients' ages were 25, 40, 18 and 34 years respectively.]

Remarks.—These cases tend to show that sudden attacks of pain associated with the development of a mass on one side of the uterus are the most characteristic symptoms of early ectopic gestation. The signs of normal pregnancy may be absent. Amenorrhœa is very unreliable, nor must we forget that menstruation may continue during normal pregnancy. The period had ceased in Case 1, which was so perfectly clear. In Case 2 it had ceased eleven weeks, but there was "show"; in Case 4 there was a continuous coffee-coloured discharge for six weeks. In these two latter cases the patients were intelligent and based their statements on the absence (Case 2) or presence (Case 4) of the menstrual molimen. We know, however, that this purely subjective symptom may mislead multiparæ. In Case 3 the patient's veracity was doubtful. In Case 1 alone was there any tendency to the changes in the breasts which are characteristic of pregnancy. The remainder were all more or less sickly. On the other hand, a trace of evolutionary change in the mammæ may remain for months or years after lactation, and the development of pelvic or even abdominal disease may set up fulness in the glands. The decidua is a valuable bit of evidence if it be shed, detected, and preserved. In Case 2 suspicious shreddy structures were expelled after one attack of pain; in others the decidua was either not shed or escaped unnoticed. In Case 2 the last pregnancy occurred thirteen years before, and in Case 4 ten years before the abnormal gestation, but in Case 1 the patient had a child eighteen months old, whilst in Case 3 the patient was only eighteen years of age and probably a primipara. The previous histories are just as conflicting in respect to pelvic inflammation from which Case 4 had suffered for ten years, whilst Case 2 had been perfectly well during her thirteen years of sterility. Case 1 seems to have been free from this complication, and Case 3 was very ill after expulsion from Russia. Acute anæmia was marked in the self-evident Case 1. Case 3 was extremely anæmic, but through constitutional causes, and the hemorrhage was confined to the interior of the sac. In Case 2 the pallor was marked at every paroxysm of pain and passed off soon, to be replaced by sallowness. In short, it was the pallor of pain. In Case 4 there was no pallor though there was evidence of extensive hemorrhage. On the other hand there was a history in all of one or more violent attacks of pain. In cases 1 and 2 the attack frequently recurred. In Case 3 there was only one fit of severe pain, which directly followed a fit of violent passion; no doubt hemorrhage into the sac occurred then. The dull pain which followed and increased was clearly due to the peritonitis which developed around the sac. The microscope settled the nature of the tubal swelling. From the first three cases we can fairly assume that extra-uterine pregnancy existed in Case 4. Severe pelvic pain, nausea, and retching came on in association with previous menstrual irregularity and subsequent uterine hemorrhage and development of a hæmatocele. When an operation has been performed the diagnosis may remain uncertain, for the fœtus is often destroyed by the internal hæmorrhages. The clot and tubal wall should always be examined by a competent observer. I must thank Dr. Eden and Mr. Targett for their opinions on my specimens. In the sections from Case 1 the villi were well developed and were eating through the thin sac wall, as often happens after the first two months. No traces of decidua remained. In Case 2 no fœtus was found, but the appearances of the sections were absolutely pathognomonic. In conclusion, it seems that operative interference is always called for when acute symptoms are present, especially if they have recurred. The chances of permanent subsidence of the pain and that which causes it are less than the risk of fatal hemorrhage or complications very prejudicial to health. Thus an operation is less perilous than expectant treatment. When, on the other hand, we can obtain, as in Case 4, a history of steady subsidence of pain and swelling for weeks after a single acute attack it is our duty to trust to rest, at the same time keeping a vigilant watch on the patient. Spontaneous recovery is then highly probable.—*The Lancet, March* 28, 1896, *p.* 836.

92.—THE PATHOLOGY AND TREATMENT OF POSTPARTUM HEMORRHAGE.

By Dr. Bokelmann.

There is no subject of more practical interest to the obstetrician than postpartum hemorrhage, since there is probably no other emergency which tests more severely his general resource, coolness, decision, and skill. Death still occurs from postpartum hemorrhage more frequently than it ought to do, and many lives are lost which might have been saved by prompt and judicious treatment. On the Continent, duing the past two years, a vigorous controversy has been going on between Veit, Fehling, Leopold, Dührssen, Fritsch, Schauta, Heitzmann, and others, respecting the causes and treatment of postpartum hemorrhage, which culminated in a discussion before the Obstetrical and Gynæcological Society of Berlin, in July, 1894. The chief points in dispute were (1) the relative frequency of traumatism and atony of the uterus as causes of hemorrhage, and (2) the necessity or advisability of manual separation of the placenta for the arrest of hemorrhage or on account of retention. Veit is much impressed with the dangers attendant upon manual separation and the heedless way in which the operation is too often done. Olshausen considers it one of the most dangerous of obstetrical operations, on account of the impossibility of sterilising the vagina completely. Veit maintains that the frequency and importance of atony as a cause of postpartum hemorrhage is greatly over-estimated, and believes that fatal hemorrhage is generally due to traumatism. He has scarcely ever seen a case of threatening dangerous atony, and does not think that the prognosis of atony is improved by the manual removal of the placenta. The importance of a differential diagnosis between atony and trauma necessitates a distinction between hemorrhage occurring *before* and *after* the separation and expulsion of the placenta. In the first case he holds that bleeding can only occur from traumatism or the separation of the placenta according to Matthews-Duncan's method. Atony can only be held accountable for hemorrhage when a large retro-placental clot has formed or when bleeding begins after the expulsion of the placenta. As regards treatment, he holds that during the first few hours after a full term labour it is never necessary to pass the hand into the uterus on account of atony, and that the manual separation of the placenta is for the most part a superfluous operation. Handling the genital canal is necessary only in cases of traumatism, and then the proper treatment is to suture immediately. Even in abnormally severe hemorrhage during the third stage he condemns manual removal of the placenta. The hemorrhage at that time indicates a partial separation of the placenta, which may be completed by vigorous friction of the fundus. The uterus is thereby stimulated to contract and retract, thus peeling off the placenta and stopping hemorrhage by closing the mouths of the bleeding vessels. If the placenta remain adherent for a long time he does not admit that the cause is to be found in the existence of true adhesions between the placenta and uterine wall, which require to be broken up artificially. The tough bands of adhesions so often described in such cases as making the separation of the placenta so difficult are not considered by Veit to be true adhesions at all, but only show that the placenta is being detached through the placental tissue and not through the decidual layer, as it ought to be. He thinks that atony is the cause of placental retention, and that repeated frictions would succeed in time in stimulating the uterine muscle to activity, and the placenta would be separated then naturally and completely. He does not believe in the immediate removal of retained bits of placenta or membranes, but prefers waiting for the appearance of hemorrhage or other symptoms subsequently. In the majority of cases the uterus separates and casts off these retained fragments without trouble. He condemns bimanual compression of the uterus through the vagina and abdominal wall, and considers Dührssen's intra-uterine tampon uncertain and not free from danger. He is an advocate of the hot vaginal and intra-uterine douche. In short, his treatment of postpartum hemorrhage consists of vigorous and, if necessary, long-continued frictions and kneading of the fundus, together with hot douching in certain conditions; in traumatism, immediate suture. Ergot is also of great value in some cases. Finally, he lays great stress upon prophylaxis, which consists in the proper management of the third stage of labour, carefully watching for and guarding against deficient uterine action.

Fehling energetically combats Veit's opinions and practice, claiming that hemorrhage from atony is six times as frequent as from trauma, and denying that hemorrhage before the expulsion of the placenta is always due to the Matthews-Duncan method of separation if trauma can be excluded. Such a sharp distinction cannot be made practically between Schultze's and Duncan's method. He does not think that Veitz's rules for practice will always succeed, and moreover they may lead to bad results. He does not see why it is allowable to introduce the hand into the parturient canal and freely handle the cervix and vagina, exploring the cellular tissue of the parametrium while searching for and suturing traumatisms, while it is forbidden to separate the placenta by hand for fear of septic infection. In five years he has had occasion to remove the placenta manually in 67 cases; 70 per cent. of these patients recovered without febrile symptoms, and only 2 died, but they were feverish when they came under observation. He denies that the placenta can be removed in every case by kneading and external pressure, and believes that too long waiting may endanger or destroy the woman's life. He considers the most dangerous part of Veit's practice to be his leaving retained bits of placenta *in utero* till the onset of hemorrhage or other symptoms subsequently. He strongly urges the removal of such retained pieces at once, for as long as they are *in utero* one never knows when a severe hemorrhage may occur; moreover, the conditions are less favourable if they have to be removed later.

In the discussion before the Berlin Obstetrical Society opinions were divided as to the relative frequency of atony and trauma as causes of hemorrhage, but all agreed that the tendency has been to over-estimate the frequency of atonic hemorrhage. Dührssen laid stress upon the importance of avoiding or minimising large loss of blood in the newly delivered on account of the obstinate anæmia and debility which are apt to result. All the speakers dwelt upon the necessity of carefully disinfecting the genital tract as well as the operator's hands before attempting to separate the placenta manually. Dührssen said that the patient would run less risk from the hemorrhage than from the introduction into the uterus of an infected hand, but he also pointed out that a non-disinfected hand is not necessarily an infecting hand. The general consensus of opinion was against Veit's practice of leaving retained bits of placenta *in utero*. As the result of this discussion Veit modifies his views considerably, and it was finally pretty well agreed that the manual separation of the placenta is justifiable when other measures have failed, but that the operation should not be done hastily or without careful disinfection.

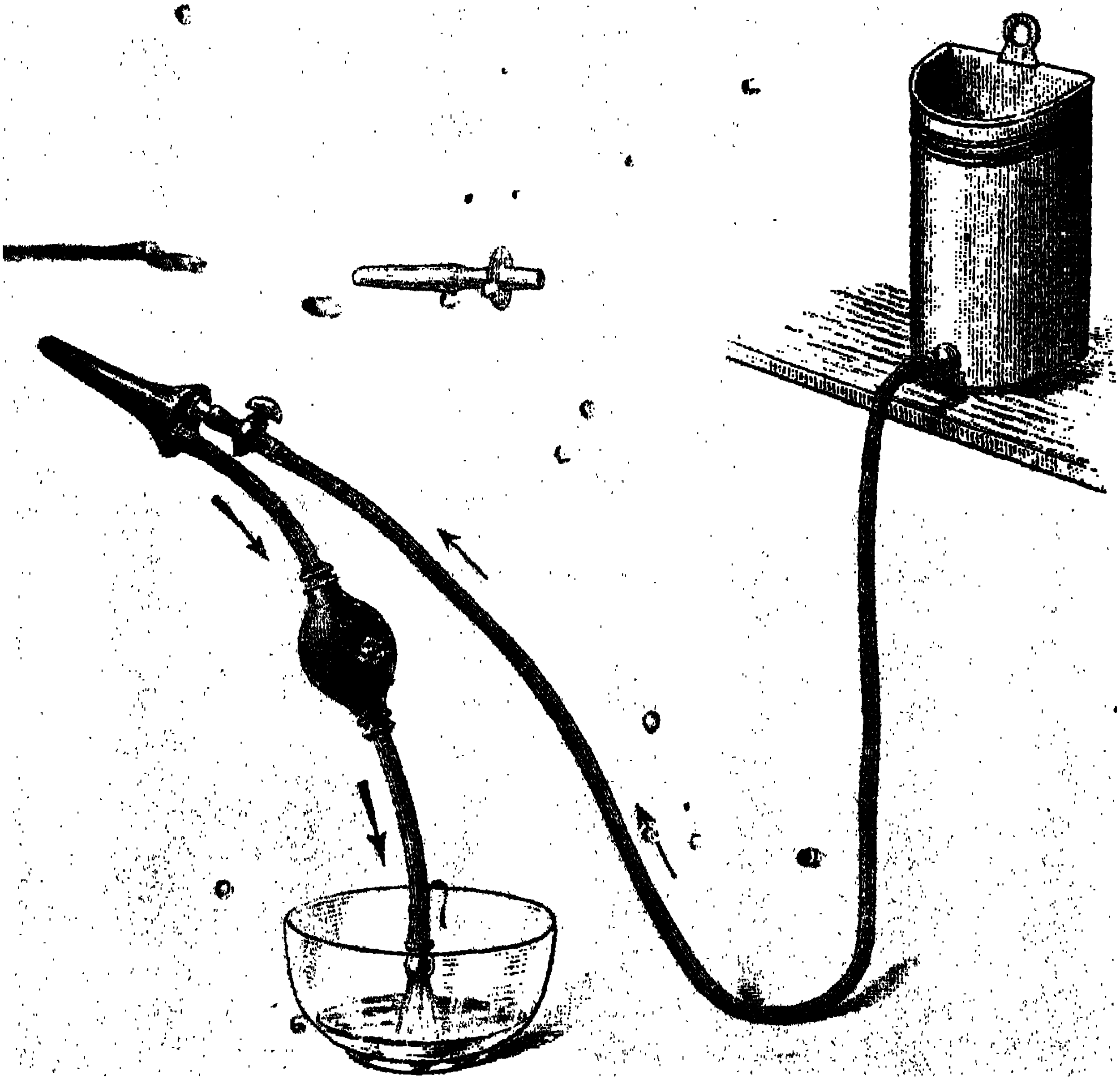
The discussion is sure to have a good effect, and Veit has done good service by calling attention to the reckless way in which the manual separation of the placenta has been undertaken of late years, and by pointing out the risks of the operation and the success which follows a more conservative treatment. Unquestionably hemorrhage and retention of the placenta would be far less common if obstetricians would take more pains in the management of the third stage of labour. Before resorting to the manual separation of the placenta for hemorrhage during the third stage, Fritsch's method should be given a fair trial. With one hand the vulva is seized between the thumb and four fingers in such a way as to close it completely. The other hand grasping the fundus upon the upper and posterior surface, presses the uterus forcibly down into the pelvis. Thus the whole external and internal genital organs are held between the two hands and combined pressure is exerted upward and downward. The uterine muscle is stimulated to contract and internal hemorrhage is controlled, while the genital canal from cervix to vulva is also forcibly compressed and bleeding from fissures and tears is checked. A pad of absorbent cotton, the size of the fist, may be laid upon the vulva to give the external compressing hand greater purchase. By this method severe hemorrhages may be controlled without risk of infection from the operator's hands, even though the source of bleeding has not been made out; it is therefore a useful manœuvre in sudden hemorrhage occurring in anæmic delicate women.—*Monatschr. f. Geburtshülfe and Gynakologie, August*, 1895. Abstract by Dr. Cameron, in the *Montreal Medical Journal, October*, 1895.

93.—SEPSIS FOLLOWING CONFINEMENT.

[Dr. Brooks H. Wells read the paper, and a discussion followed on this subject.]

Dr. Brooks H. Wells gave in detail the histories of two cases of fatal sepsis after confinement which he had recently seen in consultation. In the first case the temperature was only slightly elevated for nearly two weeks after labour, but then suddenly began to run very high, reaching over 107° F. When he saw the patient she was profoundly septic. Vaginal examination revealed a large subinvoluted uterus and a slightly thickened broad ligament, most marked on the right side. The abdomen was distended and there was pseudo-ileus, which had existed for nearly a week. There was no pain or tenderness complained of. An incision was made into the base of the broad ligament

Ingram & Co.—In the last number of the *Retrospect* we noticed the invention of the Vonda Syringe by Messrs. Ingram & Co. We have received from the same makers the Onah Douche. The important object of the prevention of the soiling of the bedclothes is here secured in much the same way as in the case of the Vonda Syringe. The apparatus consists of a douche can, which is connected with the vaginal nozzle by india-rubber tubing, a stopcock being placed on this tubing near the nozzle. There is an outflow tube proceeding from the vaginal nozzle to the basin, and on this a bulb with suitable valves is placed. The expansion of the bulb draws the liquid from the douche-can through the vagina. The accompanying woodcut will explain the mechanism of working. The vaginal nozzle can be detached and a bone rectal pipe filled for enemata. Both this Onah Douche and the Vonda Syringe are useful introductions, and fulfil important indications.



Dr. Charles R. Parke said that in his practice in Scranton it was the exception instead of the rule for a confinement to be followed by absolutely no rise of temperature. None of the cases, had, however, proved fatal, and there had been no sepsis. Some of the rises of temperature might be caused by malarial poisoning, but, whatever the cause, he had come to look upon a slight rise of temperature on the first or second day as a normal condition and as a cause of no anxiety.

Dr. Waldo stated that he had had cases where there had been mild sepsis, slight induration, perhaps quite extensive induration, that had ended in recovery without an operation. Within the last two years he had forty cases, and, in these, pelvic abscess had developed in nine, and two of the patients had died. He had seen two or three other cases in consultation, but there had been decided systemic infection. If the speaker found pus he believed in operating. He thought vaginal hysterectomy better than abdominal operations, because the wound could be drained freely through the vagina, while in abdominal operations the tendency was to close the wound up.

Dr. Stowell thought that a rise of temperature after childbirth was very important, and often resulted from laceration of the perinæum.

Dr. R. C. Newton thought the question of temperature an interesting one, and that many cases of sepsis were called malarial.

Dr. Mallett said that in the treatment of puerperal septicæmia the profession seemed to be divided. One set of men believed in early hysterectomy, while others condemned all local treatment, especially the use of the curette, because they believed that this instrument destroyed a granular layer of cells situated just below the endometrium, the function of which was to prevent the absorption of septic matter from the uterine cavity. He thought the early use of the uterine douche and curette the better practice.

Dr. Wells said he had come to believe that if there was a rise of temperature after labour in a healthy puerpera and the surroundings of the patient were good, it was due to some fault in technics. In the three cases presented, in which the tubes had remained normal, the infection had entered through the lymphatics from cervical wounds or through wounds of the upper part of the vagina. Some surgeons and gynæcologists advocated radical measures in these cases, while others did nothing.

Dr. Pomeroy said that an elevation of temperature after confinement was a matter for close investigation, and if after twenty-four hours it could not be definitely ascribed to an intercurrent affection, the case should be considered as one of puerperal sepsis even in the absence of distinct localised symptoms. He stated that the maternity wards of King's County Hospital, where he attended, were in the general hospital building and could not be completely isolated. There was a traditional impression among the hospital internes that cases of fever following labour were not unfrequently due to malaria—a common disorder in that section of Brooklyn. Dr. Pomeroy had observed, however, that a period of exemption from these so-called "malarial fevers" appeared to follow a thorough disinfection and renovation of the lying-in wards.

Dr. Proben thought it important to take the temperature before as well as after delivery, in order to have a guide as to a slight rise. Generally speaking, in the worst cases of sepsis the patients had a high temperature, although in some of them there was a low temperature. Physicians of New York were more inclined, and justly so, to attribute an elevated temperature to septic absorption than to malarial infection. Toxæmia from coprostasis was a cause of a slight rise in the beginning, and should be eliminated before pronouncing a case septic. A lacerated perinæum, any laceration in the genital tract, the character of the lochia, an examination of the uterus and appendages, an examination of the lungs, &c., should all help us to arrive at a definite conclusion. In regard to Dr. Stowell's case, he thought it showed the importance in such cases of examining the blood for the plasmodium and arriving at a diagnosis, which was of importance not alone for the present but for the future.

Dr. S. Kohn thought the possibility of the existence of sepsis without a change in the lochia, or without any discharge whatever, very important to remember. He spoke of a case of his where the woman was three weeks behind in her menstrual period, and introduced a catheter to bring it on. She had a chill, high temperature, 104·5°, the respirations were from 48 to 50 a minute, the pulse was 150, and there was no discharge, bloody or other. She said nothing about her monthly period having been suppressed, and the speaker thought it a case of pleuro-pneumonia; she had a dry, hacking cough. On the following day she showed all the signs of collapse; the respirations were from 50 to 60 a minute, the pulse was very rapid, and perspiration was profuse. She then told about introducing the catheter and allowing it to remain for two hours, thus producing a pure infection with the eyed instrument, which had never been disinfected. The speaker brought an assistant, curetted her, and removed a quantity of decomposed membrane. The temperature went down to 99°, and the woman gained in strength rapidly and made an excellent recovery.—*New York Medical Journal, December* 14, 1895, p. 763.

94.—TREATMENT OF PUERPERAL ECLAMPSIA.

[Dr. Hastings Tweedy read this paper before the Obstetric Section of the Royal Academy of Medicine in Ireland.]

Dr. Tweedy contended that it, like uræmic convulsions, arose from retention products in the system, the normal resultants of tissue waste. This retention could be brought about in one of two ways, but both were concerned, as a rule, in its accomplishment. There might be either a diseased condition of the kidneys or else an increased formation of toxin. This latter factor was, during pregnancy, always present, and was in large part to be attributed to the growth of the fœtus. He stated that the proofs were convincing that convulsions did not owe their causation to the presence of toxins in the blood, but rather to the deposit of the poisonous substance in the nervous centres, and believed that it was quite possible quickly to remove this substance from the centres of danger by depleting the blood of its water, and so causing a current to flow in its direction from the nervous centres. Purging, sweating, or blood-letting would effect this; but the kidneys alone were to be relied on to directly get rid of the harmful substance. Of course the administration of fluids in any form would completely counteract any good effects which might follow the above line of treatment. Throughout the eclamptic seizure the patient was on no account to be allowed to lie on her back, for the so-called œdema of the lungs, constantly seen in cases which end fatally, had its origin in most instances in the drowning of these organs by fluids arriving to them from the mouth. Of all drugs, morphine given hypodermically in large doses (up to 2½ grains in twenty-four hours) presented the greatest number of advantages with the fewest disadvantages in the treatment of eclampsia. No greater danger could happen to an eclamptic patient than the onset of labour, particularly if it were induced artificially. Chloroform, chloral, and pilocarpin all tended to kill in a manner similar to the eclamptic poison, and therefore ought not to be employed. Neither should any fluid, or even croton oil, be placed in the mouth, the patient being unconscious. He believed that it was attention to small details of treatment—perhaps on the lines indicated in the paper—that enabled some authorities to show results immeasurably superior to those of others, though both might be pursuing apparently a similar line of treatment.

Dr. Horne could not understand how blood-letting was a treatment applicable to all cases. He spoke favourably of the treatment of eclampsia by ½-gr. doses of morphine, or corresponding doses of opium. He also expressed himself in favour of croton oil—a drop being placed on the back of the tongue.

He had experience of pilocarpin in one case, and, although he himself did not administer the drug, under its influence the woman rapidly developed œdema of the larynx.

The President had induced premature labour successfully in two or three cases. Under certain conditions he would be prepared to adopt the same line of treatment again. However, he regarded such a procedure as a very serious one.

Dr. Alfred Smith said the recognised treatment of eclampsia was by large doses of morphine. He followed the practice that obtained at the Rotunda, when he was Assistant Master to that institution—chloroform, purgation, bromide of potassium, etc.—in two cases, which had occurred in his private practice, and with satisfactory results.

Dr. Smyly said that no matter what the treatment they had course to, sometimes they would get a run of successful cases, and sometimes the reverse. To his mind the question of inducing premature labour or not was by no means a practical one; for the induction of labour occupied considerable time, and caused great reflex action. He believed chloroform increased the tendency to death. If the patient's death was inevitable, he did not think it was a matter of great consequence whether she died in convulsions or not.

Dr. McWeeney did not think there was anything special about the eclamptic kidney or anything special about the toxæmic condition of the urine. He held with Bouchard that eclampsia was an auto-intoxication.—*British Medical Journal, February* 22, 1896, *p.* 469.

95.—BLENORRHAGIA IN WOMEN.

By Dr. KLEIN, Munich.

[The following is taken from an abstract in the *Medical Chronicle.*]

In the earlier years of the study of the gonococcus it was generally admitted that the organism, as the agent producing inflammation, could not exist except in cylindrical epithelium, and consequently, although it might produce gonorrhœal endometritis and salpingitis, it could not cause a specific inflammation of the vulva, vagina, or peritoneum, still less of connective tissue. In 1891, Wertheim proved that the gonococcus could infect the cubical epithelium of the peritoneum and even the connective tissue. Corresponding modifications in the treatment of gonorrhœa in the female resulted. An acute attack of gonorrhœal inflammation appears to demand a less active treatment than formerly. Bröse, for example, said, "I have gradually arrived at the conviction that a recent gonorrhœal infection ought, like the greater part of acute affections, to be combated by the tissues themselves, and that a general treatment is therefore more useful to the patient than all the methods of local treatment." According to Winter, the acute stage of the infection has its utility, the suppuration constituting a means of defence against the invasion of the gonococcus, and with this expectant treatment he is of opinion that the gonorrhœa may completely disappear at the end of eight days. Veit also thinks that in a simple attack of gonorrhœa the infection does not invade the tubes or the peritoneum.

With regard to the localisation of gonorrhœa, all recent observation shows that its site may be more extensive and varied than was formerly supposed. The fact that inflammation of connective tissue may result from the infection opens up a wide prospect of complications. The channels of infection are very variable. In addition to passing along the genital canal from vulva to peritoneum, the infection may follow the course of the lymphatics; it may pass direct from the uterus to its peritoneum, or from the mucosa of the tubes to the ovaries; it may even, by being carried in the blood, infect distant organs; hence the origin of metastases. The fact that metastasis may occur leads from the practical point of view to a consideration of the effects of very energetic interference. The question must always arise whether interference, such as by curetting or other method of wounding the tissues, may not lead to lighting up of the fresh inflammation or the production of metastasis. Among the observations on unusual seats and methods of extension of the infection, the author mentions an ulcerous stomatitis of the new-born, and the case of a young nurse who contracted gonorrhœal conjunctivitis which became complicated with rhinitis and then with otitis of the middle ear. As to mixed infection in gonorrhœa, there has been little addition to our knowledge in recent years. Observations for the most part go to throw doubt upon the frequency of such infections.

As to the frequency of gonorrhœa, as met with in gynæcological practice, there is great difference of opinion among those who have written on the subject. This difference of opinion probably depends on the different circumstances of the populations amidst which the observations have been made. Noeggerath's estimate of 80 per cent. is no doubt extreme. Schwartz and Sänger, with more recent experience, estimate the proportion as about 12 per cent.; the author says this figure is not sufficiently high.

As to treatment, what Klein has to say is largely an appeal for abstentation from what may be called energetic therapeutics in dealing with acute cases. To this rule he considers there is only one exception, that of pyosalpinx, which always requires surgical intervention. He says nothing to imply an appreciation of the danger of operations involving the peritoneum in cases of acute gonorrhœal infection. His treatment may be summed up in absolute rest in bed, with vaginal douches of extremely weak sublimate solution or solution of permanganate of potash.

With regard to the treatment of gonorrhœa in the chronic form, the several pages which the author devotes to the subject appear to contain nothing new.—*Ann. de Gynécol.*, *August*, 1895.

96.—VENTRO-FIXATION OF THE UTERUS.

By Mayo Robson, F.R.C.S.,

Hon. Surgeon, General Infirmary at Leeds, and Professor of Surgery in the Yorkshire College, &c.

In discussing the subject of ventro-fixation, or of ventro-suspension, of the uterus we are considering operations of expediency undertaken for the relief of symptoms dependent on retro-flexion or retro-version of the uterus with or without adhesions, or on severe prolapsus uteri, all of which, though not placing life in jeopardy, may make existence so wretched as to lead their subjects to seek some relief, even if attended with a little risk. If, then, the gynæcologist is satisfied that all that is possible has been done, short of operation, and that ventro-fixation or suspension will be likely to prove of benefit, and if the patient, after a full explanation as to the nature of the procedure and the possible risk, elects to submit to operation rather than to continue in a chronic state of discomfort and pain, I should think the advisability of operating fully established.

In answer to the question—Is it safe?

Unless we can reasonably answer this in the affirmative we must be content to give as much relief as is possible by minor remedial measures and by mechanical supports, and to eschew ventro-fixation. I anticipate, however, we shall find from evidence that the general experience of these operations, as far as safety is concerned, is the same as my own, for the 16 cases on which I have operated have recovered without giving me the least anxiety. There are, however, in all operations, no matter how safe in themselves, accidental dangers. The question of the efficiency of these operations is what we should be able to determine in a great measure, for sufficient time has elapsed since the earlier of these operations was performed to have ascertained the after-histories in many cases. There can be no doubt about the immediate relief to pain and pelvic distress, or as to the beneficial effect on the patient's general health in nearly every case, but what we want to ascertain is, does the relief last, or is there a tendency to relapse?

Again, probably some one may be able to give experience of the influence of pregnancy on the uterus after fixation by hysterorrhaphy. It will be interesting also to know whether the adventitious adhesions predispose to abortion or cause pain during the expansion necessitated by the uprising of the gravid womb; as well as to know whether, after the puerperal period has passed, there is a tendency to a resumption of the old displacement for which the operation was originally performed.

My colleague, Dr. Braithwaite, tells me that he knows of one case in which, after ventro-fixation, the patient aborted at the fourth month, apparently as the result of the abnormal fixation of the uterus, but that after recovery the uterus did not relapse into the previous retroflexion. In another case pregnancy advanced to the full time, and delivery was effected without inconvenience or difficulty. I am myself able to speak as to the immediate relief following on operation, as well as to the improvement in general health. I am also able to vouch for the permanent beneficial effects of the operation on some of my patients as shown by the complete restoration to health, the resumption of marital relations previously impracticable on account of dyspareunia, the loss of all pelvic discomfort, and the absence of the necessity of further medical attention. While I am able to give this good testimony in some cases, in others, and these have been hospital patients for the most part suffering from severe procidentia who have had to resume work not long after leaving my hand, the relief has been merely temporary, and the displacement has after all required treating by mechanical supports. Do these operations leave a patient in any way less fitted for life? This question is of no little import, and can be best answered by mentioning any possible sources of weakness, such as hernia or intestinal obstruction.

After any abdominal section a ventral hernia is a possibility, but by carefully suturing the parietes, layer by layer, and by careful after-treatment, there is very little fear of permanently weakening the abdominal walls, and, therefore, the danger of subsequent hernia should be reduced to a minimum. The danger of intestinal obstruction from the incarceration or strangulation of a knuckle of bowel by an adventitious band left between the abdominal wall and the uterus is a possibility. So far no case of this kind has been reported. The danger is, however, a real though a remote one, and Werth, of Keil, meets the objection by suturing the uterus to the bladder, and, in addition, attaches them to the abdominal wall. The fixation of the uterus in a false position and its immobility are conditions of no import to the patient if they are associated with relief to distressing symptoms and unconnected with any symptoms of their own, as appears to be the case, though it certainly does appear to be anomalous to try to relieve one displacement by producing another.

Practically, there are two classes of operations to be taken into consideration — the one extra-peritoneal, consisting of Alexander's operation or its modifications, the other intra-peritoneal, in which an abdominal section forms a necessary preliminary to the hysterorrhaphy. On the whole, I have been disappointed with the permanent results of Alexander's operation in "prolapsus uteri," unless other plastic procedures to the perineum and vagina have been employed as supplementary measures. In retroflexion with adherent appendages it is quite useless, and although in retroflexion, or in retroversion without adhesions, the operation would probably be efficient, I have yet to find the case where the other measures have proved so inefficient as to render operative treatment of this kind necessary. On the whole, I think that this operation has a decidedly limited field of usefulness, much more so in fact than in theory one might be led to expect.

Where it is necessary to lift up and fix forward the uterus hysterorrhaphy or ventro-fixation is undoubtedly the most efficient method, and where there are adhesions in the pelvis caused by appendage disease or by pelvic peritonitis, it may be the only effectual means of giving relief; moreover, this is often a truly conservative operation, since it enables many cases which were formerly treated by oöphorectomy to be saved that undesirable mutilation, for after the appendages have been detached from their abnormal positions they, along with the uterus, are raised and prevented from resuming their former faulty attachments. With the results of this operation, in retro-flexion or version with adhesions, I have been very gratified, and in those exceptional cases where the patient's sufferings are incapable of relief by any of the ordinary means, short of operation, or where the patient, through want of leisure or want of means, is incapable of following out treatment by rest, this method is certainly one worthy of serious consideration. In prolapsus uteri hysterorrhaphy is recommended by some authorities as an efficient means of treatment when supplemented by colporrhaphy and perinæorrhaphy. But the fact of certain of these advanced gynæcologists recommending hysterectomy where the patient is past the menopause proves to my mind that their experience of hysterorrhaphy in complete procidentia is somewhat like my own, not altogether satisfactory.

Hysterectomy in these cases does not enter into the question, but I cannot help mentioning it in order that I may express my view that I consider it utterly unjustifiable.

My colleague, Dr. Braithwaite, has been kind enough to furnish me with a list of the cases, eleven in number, in which he has performed ventro-fixation for backward displacements of the uterus; in five, ovariotomy and ventro-fixation were combined, and in all but one very good results followed. In the exceptional case a pessary was subsequently required. In the remaining six cases the patients, when last seen at varying periods after operation, expressed themselves as satisfied with the results, and the uterus on examination was in good position.

From the foregoing remarks it will be seen (1) that, in my opinion, in the treatment of retro-flexion or retro-version, after the failure of other means, ventro-fixation offers a means of treatment leading in so many cases to permanent relief or cure that the operation is one which is likely to have a permanent place in surgery. (2) That the necessity for the operation usually only arises where adhesions are present, other cases with few exceptions generally yielding to less heroic measures, or, if operation be thought needful, to the less serious procedure of shortening the round ligaments. (3) That in the treatment of extreme prolapse or procidentia uteri, ventro-fixation or ventro-suspenion without other supplementary operative procedures usually result in disappointment, but that in certain cases, when supplemented by colporrhaphy and perinæorrhaphy, the results are sufficiently good to encourage the gynæcologist to advise operation where all the ordinary means have failed to give sufficient relief.—*Medical Press and Circular, March* 25, 1896, *p.* 313.

97.—THE EARLY DIAGNOSIS OF CANCER OF THE UTERUS.

By W. S. A. Griffith, M.D., F.R.C.S., F.R.C.P.,
Assistant Physician-Accoucheur, St. Bartholomew's Hospital;
Physician to Queen Charlotte's Lying-in Hospital.

[The following is taken from Dr. W. S. A. Griffith's paper:]

It is a well-known fact that in all classes of society an early diagnosis of cancer of the uterus is an exceptional occurrence, and that case after case comes before us with a history sufficiently characteristic, of some months' duration, too far advanced to admit of any but the routine palliative treatment of the symptoms; and when we ask the reason of this delay, the answer is either that the patient has feared to consult her doctor, hoping that the symptoms would pass away, and afraid, perhaps of the verdict, or that she has regarded the irregular hemorrhage as of little importance; or the reply is that her doctor prescribed for her without making any examination. The symptoms of cancer of the uterus do not materially differ with the difference in kind or the site of the disease. They are of the greatest importance, and, when present, a careful examination should never be omitted. I differ entirely from those who say there is nothing characteristic about them; each of them has features which are distinctive, but they are sometimes closely simulated in other diseases. The essential early symptoms are hemorrhage, pain, and a thin, watery, often offensive discharge.

Hemorrhage.—The hemorrhage due to cancer is essentially not a menorrhagia; it has no connection with menstruation except in the rare cases of cancer of the body, and by no means constantly then. We are all well aware how difficult it is to get our patients to distinguish between menstrual and non-menstrual hemorrhages. Not only in cases of suspected cancer, but it should be our invariable rule, under all circumstances, to cross-examine our patients before we accept their statement that a hemorrhagic flow is menstrual. How many mistakes in the diagnosis of pregnancy might be avoided by this precaution? The first symptom of cancer is often a hemorrhage occurring without any assignable cause, and though frequently slight at first, it is not infrequently considerable in quantity; and this symptom occurring in a woman neither pregnant nor recently confined or miscarried, and still more particularly if she has passed the climacteric, should at once raise our suspicions and lead us to investigate it fully.

Pain.—The characteristic feature of the pain of cancer which should attract our attention and distinguish it from pelvic pain due to inflammation and other causes, is the fact that it is not only not relieved when the patient lies down, but it usually becomes worse, or at least less bearable. It is also referred more frequently to the region of the trochanters than is pain due to other causes.

The discharge.—This is not rarely the first symptom; it is not purulent, except in rare cases of cancer of the body in old women, or viscid like the white of eggs, but is watery and often fœtid and profuse.

The occurrence of these three symptoms together or separately should lead us to insist on a thorough examination. They may occur at any age after 25; the youngest of my patients was 23.

Before proceeding to the consideration of the physical examination, let me refer again to the symptom of hemorrhage occurring about the age of the climacteric—45 to 48 or later—and after the climacteric has been well established. It is commonly held that irregular hemorrhages occurring in a woman at a time when it may be supposed that the climacteric change is about to occur are sufficiently explained by assigning the climacteric as the cause, and their occurrence as being therefore physiological; this I believe to be a mistake, and it frequently leads the physician to pass over serious symptoms as of little importance, and to the patient serious consequences. Physiologically, the natural process should pass without any serious symptoms, and it may be laid down as an axiom that the climacteric is not a sufficient explanation of the occurrence of serious symptoms, whether pelvic or cerebral or of other kinds, and it is imperative that the cause of such symptoms should be investigated with the same care as if the supposed climacteric were not near. There is no more serious symptom than uterine hemorrhage after the climacteric has been passed, and though it does not invariably mean cancer, yet if there is bleeding, not mere staining, it generally does, and no time should be lost before determining the matter.

Now, there is one common cause of hemorrhage throug adult life, particularly met with amongst the hard-working classes, which, from the fact that all the common causes of uterine hemorrhage cease soon after the climacteric to produce hemorrhage, assumes in advanced life a position of great importance—namely, the true ulceration of the vagina and cervix which is often present in neglected cases of extreme uterine prolapse, and as the result of ill-fitting pessaries in these and other cases. The diagnosis of these is quite easy, and the ulceration heals rapidly if the prolapsed parts are properly supported and kept clean. In a doubtful case the microscope in the hands of any practised observer will at once enable the distinction to be made. A small fragment should be cut off with a scalpel at the edge of the ulcer, and placed at once in alcohol or Müller's fluid. This can be done with so little pain that an anæsthetic is not necessary.

There is also a form of disease of the mucous membrane of the body of the uterus, described as an endometritis, not malignant, which gives rise to a blood-stained mucous discharge, which is much more difficult to distinguish from early malignant disease of the body. But the discharge is not offensive, and there is no pain in the non-malignant disease.

The great feature which distinguishes a malignant ulcer or nodule from a simple erosion, or the nodular enlargement of the cervix the result of chronic cervicitis, is the ease with which the malignant disease bleeds when touched. The absence or presence of bleeding when a suspicious cervix is examined gently with the finger is of the highest importance; if in such a case an ulcer, erosion, or nodule can be rather roughly touched or scratched by the finger, or the mucous membrane of the cervical canal by the sound or other instrument, without any or only with the slightest trace of hemorrhage, there is the strongest probability that the disease is not malignant; while, on the contrary, if, in spite of the greatest care and gentleness, bleeding out of all proportion to the injury done occurs, the disease is almost certainly malignant.

In all doubtful cases of disease of the cervix a piece of the suspected part should be cut out, taking care to include the margin of the healthy and affected part, and be carefully preserved and submitted to microscopical examination. I do not profess to speak as an expert in histology, but I have endeavoured to make use of the great opportunities we have at St. Bartholomew's, and I am sure that a correct diagnosis can be made by these means in a very large majority of cases of disease of the cervix.

The diagnosis of early disease of the body is infinitely more difficult. When we have reason from the symptoms to suspect malignant disease we can only get at the diseased part with difficulty by dilating the uterus, and the means that we use for this purpose may in spite of care and skill, so alter or even destroy the diseased surface that we obtain little or no decisive evidence, and we then endeavour to scrape off a fragment (we cannot remove it with a knife) and submit it to microscopic examination. Now such a fragment may not even be taken from the diseased part, or if it is it will be very superficial, and will often be quite insufficient for any histologist, however competent, to be able to form a correct opinion. It therefore happens that we are at times confronted with the grave responsibility of having to advise a patient to undergo, or, what is of not less importance, not to undergo, hysterectomy, when we and any competent practitioner we take into consultation are unable to decide with certainty whether she is or is not suffering from cancer of the body. It is not to be wondered at then that even the most careful surgeon will occasionally remove a uterus which is found afterwards not to be cancerous, or will delay so long that the disease, which might have been safely removed with a considerable probability of a long immunity from recurrence, and even some probability of cure, is allowed to advance so far that removal is impracticable.

Out of 61 cases of cancer of the uterus under my care at St. Bartholomew's Hospital during the year 1894 there was only one of cancer of the body; this was an advanced case of papillary gland cancer invading the whole body, and which was as large as a large potato. Sixty were cancer of the cervix, 16 having the characters of squamous epithelioma, and 37 intracervical gland cancer, 7 were so advanced that it was not practicable to ascertain their origin. Out of these 60 cases only 4 were in a sufficiently early stage to admit of complete removal. Half of the cases (30) were between the ages of 40 and 49, 15 were between 30 and 39, 14 were between 50 and 59, and 2 were over 60.—*British Medical Journal, February* 1, 1896, *p.* 264.

98.—ON THE AFTER RESULTS OF VAGINAL HYSTERECTOMY FOR CARCINOMA.

By Professor G. Leopold.

[The following is taken from Dr. Giles' abstract in the *British Gynæcological Journal*, November, 1895, of Professor Leopold's paper :]

Till the end of October, 1894, there had been 190 cases of vaginal hysterectomy, with 10 operation deaths, giving a mortality of 5·2 per cent. The immediate mortality is not, however, the only point to consider when such an operation is being contemplated. We wish to know what are the probabilities of ultimate cure. With this object Leopold inquiries in order to trace the after histories of 164 patients (the remaining 26 were operated upon after the writing of the paper); some wrote to him, and some came to see him ; in many of the latter cases the travelling expenses were paid by the hospital. From the data so furnished Leopold's assistant, Dr. Fritz Schmidt, compiled a comprehensive table.

The statistics in the paper are based on 164 cases ; of the 26 recently operated on all were alive at the time of going to press, but it was too early to draw conclusions as to recurrence.

Mortality.—Among the 164, this was as follows :—Group 1.—Died soon after operation, 10. Group 2.—Died later of other diseases, 11. Group 3.—Died later of recurrence, 50. Total, 71.

Group 1.—Two died of exhaustion because operated upon too late ; 1 of ileus, and 7 of septic peritonitis. The latter case originated as follows : in 2 cases there was soiling of the wound during operation by bowel-contents ; in 3 the disease could not be all removed, and infected the wound ; in 2 there was discharge of pus from pyosalpinx during the operation. To minimise, therefore, the immediate mortality, Leopold lays down the following rules :—(1) The anæsthetic must be given quietly by a practised hand, to prevent straining and vomiting, which easily force coils of intestine into the wound and may cause ileus. (2) Patients in whom the disease has spread beyond mucous membrane into the muscular tissue are not suitable for operation. (3) The fouling of the wound by fæces is most important, and, should it occur before the peritoneum is opened, the operation is to be abandoned, or confined to such measures as do not open the peritoneum. (4) There is great danger in effusion of pus into the wound from the cancerous mass (pyometra) or from inflammatory pelvic fooci (ovarian abscess, pyosalpinx, &c.) ; such an accident requires the most minute care in the cleansing of the wound.

Group 2.—Death occurred in two cases from psychoses, in four from phthisis (after $\frac{10}{12}$, $1\frac{2}{12}$, $1\frac{8}{12}$, and $3\frac{6}{12}$ years respectively) in the remainder from rheumatic fever (after $2\frac{5}{12}$ years), heart disease (4 weeks), epilepsy (8 months), apoplexy (9 months), and pneumonia (13 months).

Group 3.—Deaths from recurrence. Leaving aside the above 21 cases, and 3 who could not be traced, there remain 140, of whom 50 died of recurrence = 35·7 per cent., and 90 remained alive in March, 1893 = 64·3 per cent. The average duration of life was therefore in these 50 cases 19·7 months.

Patients still living.—Of the 90 patients, 75 or 83·3 per cent. were medically examined; 15 or 16·7 per cent. sent replies. Examined by Leopold: No recurrence, 60; recurrence, 10. Examined by the family doctor: No recurrence, 3; recurrence, 2. Sent replies: Condition good, 11; condition bad (return of symptoms), 4. Thus of the 90 living, 74 remained free of recurrence.

Comparing, then, the 140 cases that survived operation and did not die of extraneous causes, we find the following:—Died of recurrence, 50 = 35·7 per cent.; living with recurrence, 16 = 11·4 per cent.; total, 47·1 per cent. recurrence; living and now healthy, 74 = 52·9 per cent.—140 = 100 per cent.

Narrowing down the inquiry by excluding all operated on within the last two years, the result is as follows:—61 are excluded, leaving 123; of these 1 was not traced, 9 died from the operation, and 9 later from other diseases—total, 19. This leaves 104 bearing on the question of recurrence. Of these there died of recurrence, 46 = 44·2 per cent.; there still live, 58 = 55·8 per cent.

The length of time after operation of the living patients is as follows:—Longer than 2 years there live, of 104 operated on, 58 = 55·7 per cent.; 3 years, 84 operated on, 45 = 53·5; 4 years, 61 operated on, 38 = 62·3; 5 years, 47 operated on, 29 = 61·7; 6 years, 33 operated on, 22 = 66·6; 7 years, 21 operated on, 16 = 76·1; 8 years, 8 operated on, 6 = 75·0 per cent.

Of these 104, 7 have recurrence, and the length of time from the operation till the recognition of recurrence was:—In 1, over 8 years; in 1, about 7 years; in 1, about 6·5 years; in 1, about 5·9 years; in 1, about 4·4 years; in 1, about 4·2 years; in 1, about 2·6 years.

Leopold draws the inference that as, in the recurrent cases, the wound was only in few cases infected during operation, we must conclude that even in early cases, the "outposts" of malignant disease may be situated at some distance from the original seat of infection. But in these cases, when recurrence took place, it was generally late. Even when there is considerable infiltration of the parametrium, fixing the uterus, recurrence may be delayed for many years, and even never occur, if the wound be kept free from soiling at the time of operation.

Three corollaries are drawn from these considerations:—(1) That the patient should be operated upon as soon as possible; (2) that the removal should be effected as widely as possible from the disease; (3) that, especially in corpus-carcinomata, no carcinomatous matter should be allowed to come into contact with the fresh wound.

The paper concludes with exact details as to the operation itself.

The vagina is to be energetically cleansed with 2 per cent. carbolic; the bladder is emptied, and a tampon is placed in the rectum. The vaginal walls are now separated as far as possible with retractors or strong hooks. The cervix is seized with a strong volsellæ, and all carcinomatous tissue first cleansed with 5 per cent. carbolic, and then scraped with a sharp spoon, removing as much diseased tissue as possible. If there is much bleeding, the bleeding tissues must be secured with ligatures. The cavity is then packed with iodoform gauze or a tampon, after a second cleansing with 5 per cent. carbolic. The cervical lips are then held in close apposition, either with stout volsellæ or by suture.

In case of corpus carcinoma, the scraping should not be done, because of the great risk of perforation and of soiling of the peritoneum, even before the operation, with pus or cancer-products. Here, therefore, the packing must be chiefly relied on. Next, the operator and his assistants disinfect their hands again. This preliminary part of the operation occupies 15 to 20 minutes.

The volsellæ used to hold the lips together must remain in their place during the whole operation; they must not even be re-applied. If the vagina is too narrow, it should be incised laterally, as far as the labia majora, and all bleeding stopped. The removal of the uterus is then proceeded with, according to the usual method. Any soiling of the hands is to be at once remedied with renewed washing; and in the steps of the operation, from the incision of the vaginal mucous membrane to the opening of the peritoneum, the operation field should be kept irrigated with sterilised water.—("*Geburtshülfe u Gynækol*" *Bd. II. Arbeiten aus d. Königl. Frauenklinik in Dresden. Leipzig*, 1895.)

Drugs, Food Stuffs, and Instruments.

Messrs. Burroughs, Wellcome & Co.—The well-known firm of Messrs. Burroughs, Wellcome & Co. have recently introduced the following new preparations:—Anæsthetic Tabloids for Schleich's method of producing local anæsthesia (see this number of *Retrospect*) Cerium Oxalate Tabloids, Effervescent Lithium Citrate and Lithium Bitartrate Tabloids, Stypticin, Piperazine, and Uranium Nitrate (see *Retrospect*, Dr. Samuel West, Dec. 1895, p. 159) Tabloids. A Carbolic Acid Soloid has also been made, wisely distinguished from the ordinary tabloids by its colour and shape. In the domain of treatment by tissue extracts, Messrs. Burroughs, Wellcome & Co. have added to their lists Tabloids of Kidney Substance, Liver, Pineal Gland, and Spinal Cord. The steady advance in sero-therapy is duly reflected by the introduction of various forms of Curative Serum. We quote Messrs. Burroughs, Wellcome & Co.'s observations upon this subject; the importance of an efficient serum is extremely great from many points of view in the present position of sero-therapy.

"*Anti-Syphilitic Serum* (Burroughs, Wellcome & Co.)—The prominence in medical treatment given to Anti-diphtheritic Serum has somewhat overshadowed several departments in sero-therapy of scarcely less importance. Not the least interesting of these is the production of Anti-syphilitic Serum in the physiological laboratories of Burroughs, Wellcome & Co. They have been preparing the liquid anti-toxin for many months, and the value of this method of treating secondary and tertiary manifestations of syphilis has now been established. In April, of this year, they were successful in preparing in the dried form a serum possessing the full potency of the liquid preparation, and are, we believe, justified in claiming to be the first firm in the world to accomplish this difficult task. This marks a distinct advance as it has been found that the dried product is very resistant to adverse climatic conditions.

"*Anti-Typhoid Serum* (Burroughs, Wellcome and Co.)—In addition to liquid anti-typhoid serum, which this firm has been issuing for some time, the important discovery has been made by them of a process for preparing this serum of full potency in the form of lustrous golden scales. The dried preparation is readily soluble in sterilised water, and by this means the bulk of the injection can be considerably reduced. The liquid variety is supplied in bottles of 10 c.c.; the dry in tubes containing the equivalent of this quantity.

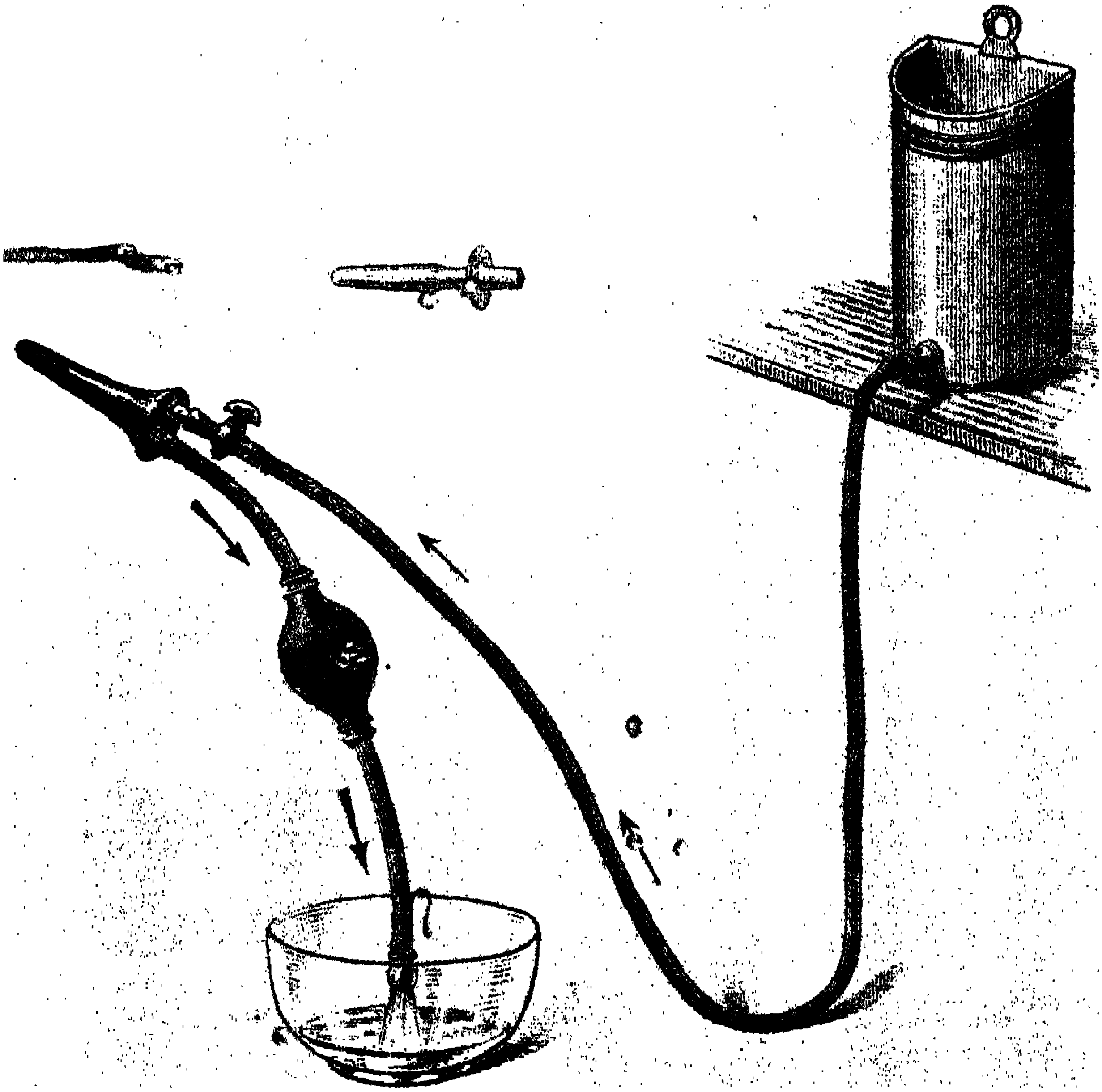
"*Anti-Streptococcic Serum* (Burroughs, Wellcome and Co.)—The researches of Marmorek and Nocard, Richet and Héricourt, and latterly of Charrin and Roger, have attracted considerable, attention to the use of anti-streptococcic serum in the treatment of various diseases due to the presence of streptococci in the system. In the *Comptes Rendus Hebdomadaires de la Son. de Biologie*, of March 1, 1895, Messrs. Charrin and Roger describe the result of their experiments with this serum in the treatment of septicæmia, puerperal fever, and erysipelas. English investigators who wish to confirm the results of these continental clinicians will be glad to hear that Burroughs, Wellcome and Co. are now issuing a reliable anti-streptococci serum in phials containing 20 c.c."

Messrs. Thomas Christy & Co.—We have received from Messrs. Christy & Co. a very ingenious little invention in the shape of a litmus pencil. Its size corresponds to an ordinary lead pencil, and is therefore very portable. The central portion of the pencil consists of pure blue and red litmus. A mark is made on a piece of paper, which is then inserted into the liquid to be examined. The presence of very small amounts of acids or alkalies is thus readily ascertained. The convenience of this invention is undoubted.

Messrs. Fry & Sons.—We have received from Messrs. Fry & Sons several of their well-known productions, including samples of Pure Concentrated Soluble Cocoa, Malted Cocoa, Ceylon and Caracas Chocolate, assorted Chocolate Varieties, Dessert Chocolate, Fruits divers. The cocoas are, of course, of the greatest interest to us here. We can say of them that they are nutritious and easily digested, as well as being agreeable to the taste. Delicate stomachs can deal with such preparations much better than with the strong infusions of tea and coffee, which often tend to interfere with the digestive processes. These cocoas not only make a very appetising beverage for those in health, but they are well suited to invalids and convalescents. The malted cocoa should possess even a greater nutritive value. Of the other preparations it may suffice to say that they are turned out with all the care and attention that is characteristic of this firm.

Messrs. WARNER & CO.—We have received from Messrs. Warner & Co. some elegant preparations, including Parvules, Effervescent Lithia Tablets, Digestive and Cathartic Pills and Tablets of Ingluvin. The Parvules of Podophyllin contain $\frac{1}{10}$ gr. of podophyllin, and are of so small a size as to be readily swallowed. The Lithia Tablets dissolve easily in water with effervescence, and thus form a pleasant way of taking the remedy. Ingluvin has been recommended as a useful agent in so-called dyspepsia, in the vomiting of pregnancy, &c., and the tablet is a convenient way of administering it. In Messrs. Warner & Co.'s Therapeutic Reference Book a good deal of information is collected together which is likely to be of service to the busy practitioner.

Messrs. Ingram & Co.—In the last number of the *Retrospect* we noticed the invention of the Vonda Syringe by Messrs. Ingram & Co. We have received from the same makers the Onah Douche. The important object of the prevention of the soiling of the bedclothes is here secured in much the same way as in the case of the Vonda Syringe. The apparatus consists of a douche can, which is connected with the vaginal nozzle by india-rubber tubing, a stopcock being placed on this tubing near the nozzle. There is an outflow tube proceeding from the vaginal nozzle to the basin, and on this a bulb with suitable valves is placed. The expansion of the bulb draws the liquid from the douche-can through the vagina. The accompanying woodcut will explain the mechanism of working. The vaginal nozzle can be detached and a bone rectal pipe filled for enemata. Both this Onah Douche and the Vonda Syringe are useful introductions, and fulfil important indications.



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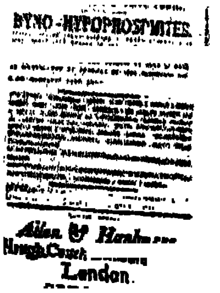

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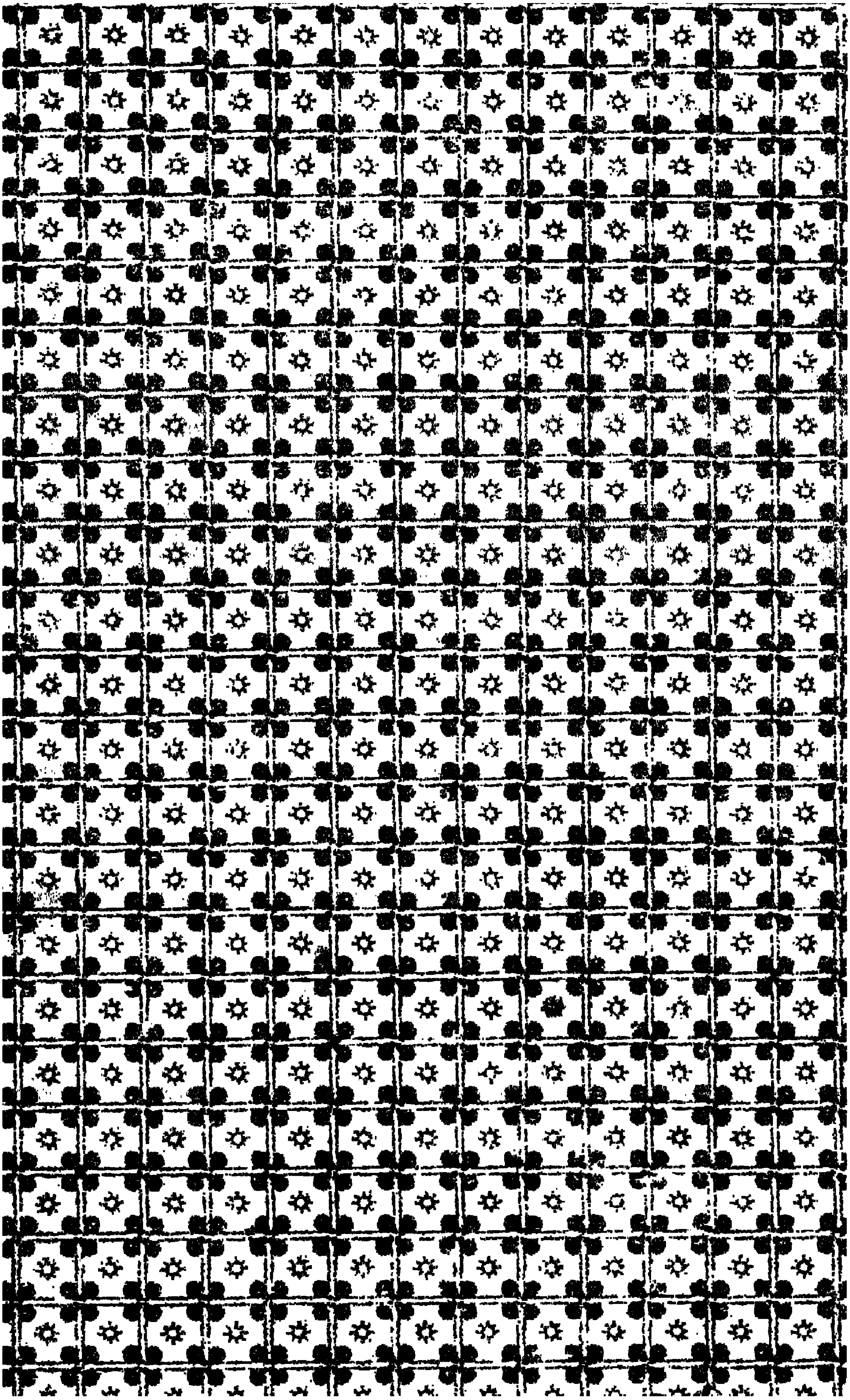

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